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E. H. DuVal

2002

Catalog: #010 - 019

Journal: 26 Feb – 14 June

Vegetation ID



E. H. DuVal

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Vegetation ID



DuVal,  
E. H.  
2002

catalog

010

Isla Boca Brava, Chiriquí Province, Panamá 5 May 2002

Chiroxiphia lanceolata chick 4-5 days old

Aluminum band #485, blood sample taken 2 May 2002

found dead in nest B-5, several <sup>(3)</sup> days after female was captured at the nest and banded WAW # 486.

Partially decomposed when found - no weight taken.

Nest near Second Beach ~~to~~ display perch #1.

011

Isla Boca Brava, Chiriquí Province, Panamá 20 May 2002

Chiroxiphia lanceolata adult male, definitive plumage

alpha male at ACA display perch in 2002: AYA # 078

Died after held in captivity for 18 hrs. ( $\alpha$   $\sigma$  removal experiment)

wt on 19 May = 16.5g

wt at death 15g. Rt testis 5.5 x 3.7 mm Left testis 6.4 x 4.0 mm

tarsus 19.2 mm; wing chord 72 mm; tail 33.2 mm (main), 13.1 mm left extension,

14.0 mm right extension (central rectrices); fat 0; hormone and parasite samples taken when captured 19 May 2002,

Isla Boca Brava, Chiriquí Province, Panamá 8 June 2002

012

Chiroxiphia lanceolata nest #E-AV, ♀ unknown

Coordinates 17P0365904, UTM 0908138  $\pm$  14m

On ridge between the MAN and HEL gullies, ~50m from the northern shore of the island.

Eggshell and regurgitated seeds found below nest

One horsehair woven into nest - unusual.

In a Euphorbiacea tree (sapling), 145cm high

Slope of hillside was 5°



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2002

Catalog

013

Isla Boca Brava, Chiriquí Province, Panamá 28 June 2002

Chlorophila lanceolata nest # E-42 ♀ colored VGT # 448

coordinates: 17° 53' 59.92", 79° 08' 16.7" ± 1m

near the MALLO display perch, elevated in nearby gully  
145 cm high, 95% cover, on hill with 25° slope

Includes one horsehair. This nest and E-43 are  
the only nests I've ever seen that include horsehair

Chick SBY #4523 fledged from this nest on 25 June 2002.

Isla Boca Brava, Chiriquí Province, Panamá 15 June 2002

014

Chlorophila lanceolata nest # B-14 ♀ unknown, Toward cap plumage

coordinates: 17° 53' 66.36", 79° 08' 02.0" ± 3m

in gully 15m from N shore of Isla Boca Brava, down " from  
BTE 2 display area.

Nest failed after eggs did not cover for 32 days. First egg  
laid 6-8 May 2002.

95% cover over nest, on inside slope of 30°, 3 cm high

Fork supporting nest broke when collected

Isla Boca Brava, Chiriquí Province, Panamá 28 June 2002

015

Chlorophila lanceolata nest # B-19 ♀ unknown

coordinates: 17° 53' 59.97", 79° 08' 14.5" ± 5m

nest failed (depredated), with 2 eggs on 8 June 2002

Construction began < 19 May, 2 eggs in nest on 28 May

152 cm high, in streambed of the MEL Gully

95% cover over nest



DuVal,  
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2002

## Catalog

Isla Boca Brava, Chiriquí Province, Panamá 29 June 2002

016 Chiroxiphia lanceolata nest # E-31 ♀ WVR #149

coordinates 17P 0366296 UTM 0907909  $\pm 9$  m

72 cm high, 90% cover over nest, large numbers of seeds below

2 chicks fledged - GWS #521 and SYR #522

In a sapling near CCL 2 dance perch, not near any gullies

017 Chiroxiphia lanceolata nest

location and ID # not recorded

collected for dissection/materials identification in May 2002

failed - eggs depredated, ♀ unknown

Isla Boca Brava, Chiriquí Province, Panamá 25 June 2002

Alcohol preserved

018

Chiroxiphia lanceolata chick 7 days old

Nest E-32

Banded with red plastic leg band. ♀ = BPW (possibly BVW)

found dead in nest

tissue sample taken (heart, liver, muscle); stomach empty

019

Chiroxiphia lanceolata chick 8 days old

nest E-32

Banded with yellow plastic leg band ♀ = BPW (possibly BVW)

tissue sample taken (heart, liver, muscle); stomach empty

found dead in nest with sibling, EHD 018. Abandoned?

Nest had not been disturbed by researchers.

GPS Coordinates 17P 0366896, UTM 0907875  $\pm 10$  m

020

Southern California - salvaged from hunting trip  
of an acquaintance<sup>1</sup> in 2000 - exact location unknown. ♂  
no data. Received as a gift - teaching collection.  
Callipepla gambelii



D. Val,  
E. H.  
2002

## Journal

Panama City, Republic of Panama

26 February 2002

This is the start of the 2002 field season - perhaps my last on Isla Boca Brava. The field crew this year is:

Ryan D. Lorenz from Saskatoon, Saskatchewan, who is a distant relative of Konrad Lorenz. A good omen for any behavioral study! He has experience with arctic geese.

Rebecca Carter from Connecticut, currently based out of California. She has extensive experience with David Winkler at Cornell University & has been working most recently in museum exhibit design.

Julia Young-Lorion from Oregon, a graduate of the wildlife program at OSU. She has experience with captive-reared macaws in Costa Rica and has been most recently working as a veterinary technician.

We arrived in Panama in the evening, and waited several hours for Becca's flight to arrive. We stayed at the Hotel Marparaiso, as usual, on the corner of Calle 34 E + Avenida Justo Arosemena.

Yadira told me that our rancho fell down when I called from the airport. We'll have to see <sup>how things are when</sup> we arrive!



DuVal,  
E. H.

2002

## Journal

Panama City, Panama  
27 February 2002

Aceti - Oxierno, SA

270 - 1977

Paitilla

Apartado: 114 Zona 1

Filled nitrogen tank at Aceti - Oxierno & went to STRI to pay the bill and use the internet. We looked up supporting articles for the side-project on nest stage failure.

Metropolitan Park:

We hiked through starting at ~ 4:00 pm, enjoying the place & spot-surveying for CTMA's for comparison with November's observations.

About  $\frac{1}{2}$  way up the road from the Campy Crane to the top of the hill we found one pair of unles QRing (for > 8 min) on & off. We walked back into the forest to find them, but never did see them - they seemed to move away as we approached.

Agouti + coatis seen. Dinner at El Trapiche, on Via Argentina.

28 February 2002

\$15 taxi to Boca Chica & I didn't get a receipt. We saw a jaguondi sprint across the road in front of the truck just as we entered town. We took the bus from

Panama City to Horconito's, then went straight to the island. The rancho really did slow down. We're ALL in the mushroom house.



DoVal,  
E. H.

2002

## Journal

Isla Boca Brava, Chiriquí, Panamá  
1 March 2002

Ryan, Julie, Becca, & I ate a leisurely ~~lunch~~ breakfast at the restaurant and I verbally ran through all the data collection methods we'd be using. Then we packed up and hiked down Main St. to Claus's house (it looks wonderful & is fully finished) where he & Mechtild treated us to cold water. We hiked back via the beaches trail. The North wind was blowing very strongly & all birds were silent. After lunch, we took a siesta & then hiked the North trail to Bob's fish camp (coming along rapidly) & the far Rancho, & returned past Bridge to main st. WYR (DM) & AR - (DM) were foraging near the bridge itself. WYR is fully DM these days!

I ran through the Animal Behavior Lunch presentation to get everyone on the same page, & moved upstairs in the hut - so far it's still standing.

2 March 2002

Today was the first day of observing munks in action. I stayed at SLN1



DoVal,  
E. H.  
2002

## Journal

Isla Boca Brava, Chiriquí, Panamá

for 4 hours in the morning & watched with Becca first, then Julie. Things were so dead that I switched to BRI with Ryan in the afternoon. We did get a little more action - a QR w/ ARA + BOW (DMs). In the AM, others rotated through FBE 1/2 + ACA 4; in the afternoon, ~~FBE~~ FBE 1/2 & CCL 1.

3 March 2002

Becca got full bands on a QR bout today - WBR & ABA at CCL 1. Otherwise things are still extremely quiet. I did an observation session at MAN 1 and it was nearly deserted - an unbanded DM did show off his bare legs to me & was acting territorial (I whistled him in). I guess I'll have to go mistnet there... ASP (RC) showed up at BRI. He's a chick from last year & is a classic young RC; cap half-grown-in, etc. I was feeling energetic in the afternoon & went out with my camera to try to take some 500mm manakin photos - no luck.



DoVal,  
E. H.  
2002

## Journal

Isla Bocca Brava, Chiriquí, Panamá

4 March 2002

We went to four "new" dance perch areas today to expand everyone's working knowledge of the island (BTR, BTE, GUL, EDM). Everything was still extraordinarily quiet. After lunch at the restaurant, we decided to explore rather than doing watches, as the North Wind had blown up again & was keeping the manakins silent. We hiked down Main St. to CCL5, around "Frank's New Road" to CCL 1 & 4, to SNK 1, & down the gully to the beach trail. From there ~~we~~ I let Julie, Becca, & Ryan guide us to SBE1, SLN1, BTR, & FRE. They did wonderfully, & I have high hopes that finding these display perches will soon be second nature. It was 85° F in the evening - cool & breezy.

5 March 2002

The North Wind was still ferocious this morning, so we opted to hike through Mangrove rather than doing early watches. We went down Main St to John's land, followed the fence line north to the ocean. One tree that forms part of the fence was scored with deep scratches, some



DoVal,  
E. H.  
2002

## Journal

Isla Boca Brava, Chiriquí, Panama

much fresher than the others. The bark & inner cambium layers peeled downward from the cuts. Perhaps an anteater? Or a jaguondi? The cuts seemed too narrow for a cat's claws, though.

We continued on the "Adventure Trail" (backtracked to where it hits the fence line) to the gully that leads to WEL; tramped up to the WEL area (finding a leathery iguana under a vulture roost - I couldn't separate the head, so I left it in an obvious place ~~for~~ & will retrieve it once the rainy season has softened it up); retraced our steps to the ocean; climbed over into the MAN gully, as there was no passing through the mangrove area at high tide; flagged the MAN dance perch; & returned to BRI via the inland gullies. Whew! All that before 10:00. Then we split up for observations at ~~SBE~~ FBE 1/2, CCL, & SBE 2. I watched SNT, & there is definitely an unBDM here, still.

6 March

6 March 2002

I did watches at SBE 3, <sup>LOT 1</sup> ~~LOT 1~~, & CAS 1; there were banded birds at LOT & CAS, happily, & they were reasonably active. Everyone did individual observations, then met up at SBE to swim at 5pm. I got giffed at by Yarina because we were late for dinner & the place was packed.



DoVal,

E. H.

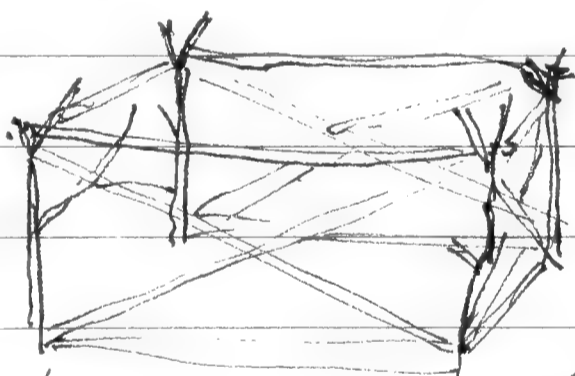
2002

## Journal

Isla Boca Brava, Chiriquí, Panamá

7 March 2002

This was our first official day off, & we all celebrated by sleeping late. I started work on the manakin enclosure that we'll use for the removal experiments. The electricity company has been trimming all the trees (ie cutting them down) near the power lines, as there have been two recent power cuts due to a fallen tree. I salvaged branches from the downed trees to use as supports, & will stitch a mesh cube to fit over the top:



X-shaped crossbars should increase stability, & I'll lash the whole thing together

with twine. It might work, or it might be a repeat of the shelf-building effort in Guyana.

I took two short walks with my camera & new 500mm lens to try to get manakin pictures, with no luck.

8 March 2002

This morning I saw a great-tailed grackle (*Quiscalus mexicanus*) male & heard another by Enrique's house - the first time



DuVal,  
E. H.

2002

## Journal

<sup>2002</sup>  
8 March<sup>1</sup>, continued

Isla Boca Brava, Chiriquí, Panamá

8 March

I've heard or seen GTGR's on this part of the island. Does that mean that it's becoming more disturbed & open, & therefore better suited to them? Ryan & I saw a smallish grey falcon, slightly larger than a merlin & with a dark moustache mark, flying over Main St. between ACA & FBE. It was a good day for new birds.

We did watches around the study site, as before, & Julie saw the males at SBE 2 dance for a female — finally! This is the first dancing for a female we've seen in 2002. I observed RYV aggressively chasing BPY at FBE 2. Did we ever establish that BPY was ♀ in previous years, or was it just a hunch? Is RYV stepping up in the ranks by force (!) or just reinforcing the way things were?

There was a giant iguana (~6' head to tail) in a tree over the pigs' enclosure after lunch.

INTERESTING MANAKIN NOTE: RSP (RC/SLBF) was seen hovering before a spider web & plucking at it, with the spider in the middle. It wasn't clear whether he was attempting to



DuVal,  
E. H.

2002

## Journal

8 March 2002, continued

Isla Boca Brava, Chiriquí, Panamá.

8 March, cont.

EAT the spider or not, but he was definitely pulling at the web near to where the spider was sitting. The spider was still in the web when the warblers flew away.

9 March

9 March 2002

We went as a group to WEL 1/2, 3, & 4 this morning to get the locations down, & then Ryan, Becca, & Julie rotated through those perches for the morning (Ryan did WEL 3 in the afternoon). All was extremely quiet, but the afternoon was quite active all around the island. GAR(DM) was QRing with a DM by GULY, & my watch at FBE2 included many instances of RYV chasing BPY. Was BPY NOT alpha last year, as I had thought? Or is RYV just moving up & forcing BPY to a lower position? Is BPY just plain getting old? And if the risk of having a  $\beta$  partner is that they may usurp the  $\alpha$  role, it opens all kinds of screw theory possibilities.

I saw 4 DMs at FBE4 - just looked there in passing because two were QRing. Two males flew down to the tp & did a fly-at display while two others



DuVal,  
E. H.  
2002

## Journal

Isla Boca Brava, Chiriquí, Panamá

9 March 2002, continued

9 March, cont.

Sat about a foot away, watching the dancers. It looked like cheerleader tryouts in progress!

Swimming at SBE after work, & I heard QRing & dancing at SBE5.

10 March 2002

10 March

We did watches at a smattering of display perches today from the "core 12" selection. While at BRI 2, Ryan was surprised and then chased by a large (6-foot-ish) snake with white on its head and a dark body with a faint pattern similar to that of a fer-de-lance. We can't be sure, as it was gone when Becca went to retrieve his backpack and when I specifically searched for it in the afternoon, I found nothing.

Frank will not be going into David tomorrow, so errands will have to wait.

11 March

11 March 2002

We continued to do watches today, and for the first time this season the forest was alive with male LTMA's dancing for females. WAY & AYA were QRing at ACA 4 - it



DuVal,  
E.H.  
2002

## Journal

11 March 2002, continued

Isla Boca Brava, Chiriquí, Panamá

11 March, cont.

seems like GRR and GRA, dominant there last year, have been completely replaced. I started a list of dance perches where a turnover has occurred, just from memory. I'm not sure that we have positive status info for all those perches, but what if:

a lost  $\beta$  is replaced, but a lost  $\alpha$  results in total turnover of the territory-holding pair?

Are there times when a  $\beta$  is sufficiently experienced/capable enough to become  $\alpha$ , & times when he is not?

It's possible that the birds were this active before the North Wind began, but ~~for~~ our purposes, this is the first day of the breeding season.

12 March 2002

We went to David today, sharing a \$10 taxi with Yadira to the crossroads at Horconcito. We saved money by hitch-hiking home on the back of Reuben Villalobos's truck, which was filled with ice for Pollo's trip to the <sup>Islas</sup> Secas. Julie & Becca were able to squeeze into the cab, but Ryan & I perched precariously on the tarp-covered mountain



DuVal,  
E. H.  
2002

## Journal

Isla Boca Brava, Chiriquí, Panamá

12 March, cont

of ice for the entire trip to Boca Chica. I think I surprised everyone by having us take the ride, but it turned out to be a fun adventure — and we made it home for dinner.

13 March 2002

Today was the day off for everyone else. I did three watches, including some good data collection at BTE1.

14 March 2002

I saw dancing for a female five times today! I pushed us and we did a four-watch day; our lazy 6-hour days have been giving everyone the wrong impression, I think. Four watches wore everyone out, but overall went well.

15 March 2002

We set nets at Snakefield display area after lunch, and Julie and I will run them tomorrow. The unbanded DM (our netting target) danced for a female as we were setting up the 12m, & I sent Becca + Ryan to get bands. Unfortunately, they <sup>each</sup> came up with



DoVal,  
E. H.  
2002

## Journal

Isla Boca Brava, Chiniquí, Panamá

15 March, cont.

a different partial combination on the unb DM's partner. It's an active site, though...

16 March 2002

Julie and I caught the unb DM at SNK and banded him BSY for easy recognition — currently the only DM with an S in the middle. Shortly before we caught him, we saw unb DM + — A (DM) (\*) for BOB. It's always good to see manakin #001. Katie saw BOB (or GOB?) copulate at this display perch last year.

We caught the unb DM almost immediately in the morning — especially impressive considering how many hours I wasted ~~searching~~<sup>netting</sup> for him last year.



DoVal,  
E, H.

2002

## Journal

Isla Boca Brava, Chiriquí, Panamá

17 March 2002

Ryan was chased by another large (8" diameter (?)) "Silvador" snake today, this time at GUL 2. Becca + I were entering data at ~~FBE~~ SBE (on the beach) when he came dragging out of the forest. This clearly exceeds his expectations from the "occasional snakes" I mentioned in my field assistant ad — mine too!

Becca + I were netting at SNK in the morning and caught one unb G. In the afternoon, we recovered Ryan's hat + the tripod (thrown at the snake) from GUL 2, then set nets at WEL 4 for tomorrow.

I managed to whack myself in the right eye with a large spiny vine, and spent a good two hours with my eye vet-wrapped shut (courtesy of Becca). Vision in that eye was very blurry for the rest of the day.



DuVal,  
E. H.  
2002

## Journal

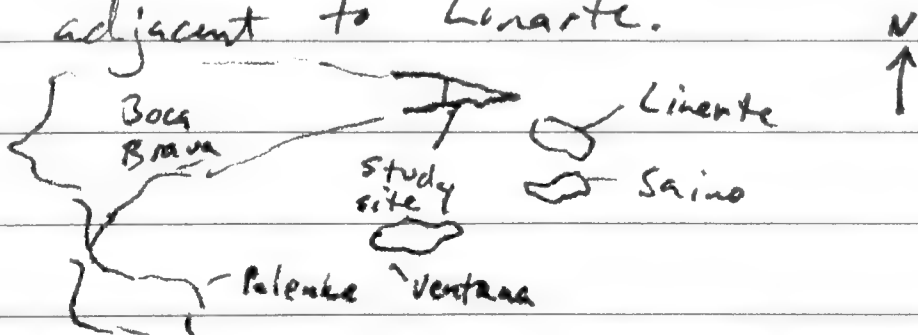
Isla Boca Brava, Chiniqui, Panamá

18 March 2002

Netted half-heartedly at WEL 4; I'm not sure the subDM still controls this area, though Ryan saw one subDM at WEL 3 this week. YAR + Y-A (DMs) were QRing at WEL 4 as I set the nets this morning. In the afternoon, I did a watch at BR12 while Becca & Ryan entered observation data. 3 days in a row of data entry is just too much! The database setup needs to be refined still, but no matter what it seems like data entry just takes too long. Only entering time slots & birds seen took me 20 minutes for one busy watch. Luckily, we can consult with John about this when he & Eileen arrive. No word from them yet - I guess I'll just reserve a cabin & see what happens.

19. March 2002

Today was the day off and my plans to go to Linarte were thwarted by Claus & Mechtildt, who took us to 'the beach' - the far beach that connects Isla Boca Brava to Isla Palenke, and then the small spit of sand on the seaward side of Isla Saino, which is adjacent to Linarte.



12-10-1917  
12-10-1917

12

12

DuVal,  
E. H.  
2002

19 March 2002, continued

## Journal

Isla Boca Brava, Isla Saino, and Isla Palenke, Chiriquí, Panamá

19 March, cont.

Both areas had <sup>lance-tailed</sup> manakins present. At the beach near Palenke, I heard the duet song three times & tramped back into the mangroves to see & unbanded red cap. I had heard dancing in the same area<sup>w/ 2 eels</sup> & can see why manakins may end up in mangrove habitat - the roots form a maze of perfect dance perches. And yet the study site LTMA's don't seem to spend much time in the mangroves. Too swampy?

On Isla Saino, I whistled an imitation of the downwhistle & pip calls, & immediately had an unbanded DM coming to investigate. He did a pip flight throughout the small area of manakin-appropriate habitat: a small clump of spiny palms & saplings just inland from the beach with a human-dug well at the north (inland) end of it. He was also observed to give solo QR bouts that lasted for more than 3 minutes. Is it possible that there is only one LTMA on Isla Saino? The rest of the island is burned yearly by an unknown person, and someone had been clearing



Dolal,  
E. H.

2002

## Journal

Islas Boca Brava, Saino, and Palenke, Chiriquí, Panamá  
19 March 2002, continued

March cont.

sections of it by machete. The majority of the island is sparse medium-sized trees (large enough to withstand regular fire) and grassland. Unless there is another gully-like area on the other side of the island, I would say that the DM was in the only ~~off~~ habitat suited to LIMAs.

Other birds seen on that small area of the island included:

Variable seedeater ♂ + ♀

Elania sp.

Red-legged honeycreeper ♂ + ♀

woodpecker (same as on IBB)

Panama flycatcher...? Dk through eye, tail notched.

20 March 2002

20 March

We did a regular 3-watch day today, with me going to GUL 2, where the most recent snake was seen. Frank looked up the "siluador" snake in his snake book and says it looks like the snake-eating Colubrid Clelia clelia. They are red with a yellow ring around the neck when young, which would account for the fact that no one can remember seeing a small



DoVal,

E. H.

2002

Isla Boca Brava, Chiriquí, Panamá

20 March 2002, continued

20 March, cont

Silvador. The book (Amphibians & Reptiles of Middle America, in German) says that a 2m Clelia was found with a 1.8m Bothrops inside its stomach. Of course, the book also says that Clelia are non-aggressive...

Beca found two nests today that are either old or under construction. I'm not at all sure that they're LTMA nests - they have an over-abundance of black rhizomes & seem a bit sloppier than usual, but that may just be from degradation.

Julie found an antshrike nest along the LOTES trail that is just 3-5m from the one found by a tourist last year. Are antshrikes nest-site faithful?

During my GUL 2 watch, a DM chased a vireo out of the dp area, though there was no ♀ present. Vireos seem to be nest-prospecting right now, & it would be very inconvenient to have a hyper-territorial vireo couple in the middle of one's display area....

How common is manakin inter-species territoriality?

I did a watch at WE23 & there is definitely an unb DM in regular attendance. We'll have to get there soon.



DoVal,  
E. H.  
2002

## Journal

Isla Boca Brava, Chiriquí, Panamá

21 March 2002

This was a day of ups and downs. The down part was really just my stupidity - I managed to step squarely in a large pile of human diarrhea while doing a watch at BRI. But I also recorded the first copulation of the year (RGW(DM) copulated with AYR(G) at BTE1 after an entirely solo display) and found the start of the first nest along the path to the beach below our rancho. Amelia is leaving the island for her birthday, so we danced and had an early birthday celebration in the evening.

22 March 2002

Eileen + John may not be coming tomorrow - they were supposed to call, but I didn't hear from them via phone or email. We're just carrying on as usual, + I'll be delighted if they come.

23 March 2002

Eileen and John are here! I went to Isla Linarte in the morning on an expedition to see whether any of our banded birds have flown across the water. If not, I'd like to try



E. H.

2005

# Journal

## Isla Boca Brava, Chiriquí, Panamá

March, cont. Translocating our removed alpha males to Linarte rather than keeping them in captivity. I took the GPS unit and mapped my route from the northern tip of the island to the other end (nearly - the rising tide cut me off from the last low beach). Along the way I recorded the position of singing pairs I encountered and checked all the birds that I saw for bands. I found one nest under construction in a dry streambed by the main western beach. I only saw one banded DM - OYO, who was banded very near to where I saw him in 2000. He was behaving in a very alpha-like manner. I think it would be feasible to release birds from Boca Brava here: if there is interchange, it is at least rare.



E.H.  
2002

# Journal

## Isla Boca Brava, Chiriquí, Panamá

March

I walked the length of the study site with Eileen and John, just because I want to show them everything. We saw the Mantled Howler Monkeys by second beach - a daily occurrence for us, but it was their first look at a wild primate. Frank was drunk from his weekly payday drinks with his workers, and was behaving poorly. At least it was a clear demonstration for my advisor of why I don't want to work here forever.

24 March 2002

I took Eileen and John to the BTR display area to explain our observation protocols, and the birds cooperated by performing some beautiful displays in the absence of females. Then we went to BTE where RGW did a solo display for a female. John was making enthusiastic suggestions about skipping lunch to do more watches, much to the horror of my regular assistants. Eileen and I talked about the Ph.D. into the evening and she encouraged me to move on to data analysis.

25 March 2002

John & Eileen, observing as a team,



E.H.  
2002

# Journal

## Isla Boca Brava, Chiriquí, Panamá

Hardy cont.

recorded a copulation by WBR(OM) at CCL1.

I saw ARA(OM) SF-1 for a female at BRI (with a short involvement by the 2<sup>nd</sup> male).

It's a good time to have my advisor visit - the birds are very active. John and I stayed up reorganizing the database until 10pm. I'd forgotten that we were having a microsoft Access wizard come to the study site! It's exactly what I needed.

### 26 March 2002

Today I netted for an unbanded DM at WEL3 with Eileen + John. John and I again stayed up late fixing the database. We're adding several macros that will make the data entry go more smoothly.

### 27 March 2002

Ryan, Julie, + Becca went to David without me today + did wonderfully. John, Eileen, + I netted for the WEL3 unbanded DM in the morning, then worked on the computer during the afternoon (while we were more alert). In the late afternoon, we hiked through Mangrove via the main "Sendero de los Manglares" gully. Eileen said she could understand assistants' dislike of the



Dolan,  
E.H.  
2002

# Journal

## Isla Boca Brava, Chiriquí, Panamá

place as we followed the coastal trail out. Then we blew off all stodgily-enforced dinner rules and went swimming at second beach as the sun was setting. It was beautiful, and well worth the risk of being yelled at - we were more than half an hour late to dinner.

### 28 March 2002

Two copulations were recorded today - one by Becca, and one by John + Eileen (again WBR at cca1). Females have started laying, and three eggs appeared in Becca's nests. I found a woolly possum (not sure of the species) and called Eileen over from a watch to see it. We had a bonfire on second beach and made S'mores, then went swimming under the full moon. It was a lovely day. Suzanne, a young STRI fellow on her way to Bocas del Toro to study sea urchin evolution + ecology, joined us, as did Mercedes.

There were only two flaws in the day: Eileen noticed in the evening that the Lonely Planet claims there is no bus service at all on Good Friday, the day they intended to leave. We have to wait until tomorrow to confirm or



E.H.  
2002

# Journal

Isla Boca Brava, Chiriquí, Panamá

March, can't rebut that. And my leatherman disappeared (I noticed it on 29 March, really). Stolen? or just lost?

29 March 2002

We changed John + Eileen's flights for a total of \$200 to get around the problem of the buses. We're still not sure whether the buses were really running or not, but... at least we know they will run tomorrow. They worked with the database all morning, did a little nest-searching, and met us for lunch on second beach. The slow morning of data entry gave them some good ideas about streamlining the process, & I went back with them in the afternoon to participate in restructuring the database further. Becca & Julie both saw copulations today, with partial bands. John taught us how to play canasta. It's been wonderful having Eileen & John here. It's a grad student's dream of easy-access advice, expertise, etc.

30 March 2002

Eileen + John left in the morning, and life returned to normal. We did a regular 3-watch day.



2002

Isla Boca Brava, Chiriquí, Panamá31 March 2002

Today was Easter, which means it's time for our annual "easter egg hunt." Easter was earlier this year than in previous years, and for once there were actually nests to be found. Meghan came over to help us, and Suzanne (the STRI fellow) joined us for part of the day. Becca found five nests, with no eggs, putting my two to shame. It's fun to have such a talented nest-searcher on the research team!

1 April 2002

We had a good, long day today with nothing in particular to report. I'm exhausted.



DoVal,  
E. H.  
2002

## Journal

Tuesday

2 April 2002

Isla Boca Brava, Chiriquí, Panamá

Today was the official day off. Since I had missed last week's trip to David, I went in with Frank and checked email for four hours. Relevant news: there's an undergraduate interested in doing an honors thesis on the manakin parasite stuff; IB has already allotted travel funds + will not be giving me any this year (they sent out an email in early March saying that the deadline was March 8, & I got to town on March 11); Eileen + John got home safely. I purchased \$5 worth of screen for the seed collection experiment, caught the San Felix bus, & had the incredible luck to catch a lift with Marcello (?) all the way to Boca Chica. I had already steeled myself for walking the 17 km road, so it was a pleasant surprise. The guyaba are ripe + the <sup>(cashew fruit)</sup> drivers shared theirs; the marañón are also ripe, so we picked these during a brief stop along the route. Pablo, Guillermo, + Luis, who are working on a gas station on the dock in Boca Chica, shared their dinner of frituras and fried hotdogs. Frituras are fried dough made with egg + flour - a cross between hojaldres + pancakes. Pollo + Eloy's mom ~~shared~~ <sup>gave me</sup> a cold slice of sandía. A wonderful end to a long day.



DoVal,  
E. H.  
2002

## Journal

Isla Boca Brava, Chiriquí, Panamá  
3 April 2002

Today was one of those varied, successful days that makes being in the field so much fun. Julie and I netted at WEL3 in the morning, where the nets have been up but closed for more than a week.

We caught two DMs, neither of which were familiar to me. It's possible that in areas like WEL3 where there is no clear  $\beta$  there is a higher-than-normal rate of visitation by floater DMs.

Because of the difficulty of band-reading, our sampling will certainly be biased toward resident males. We closed the nets due to sun at about 11:00 am, & went to place screening under a few nests for the seed collection experiment that we hope to write up as a short methods paper on determining nest stage. The trend of birds re-nesting in the same area seems to be continuing this year. We found two new nests by SLN1, & put a screen under one of those that's still under construction. Ryan's R-A became R-1, <sup>now</sup> ~~as the~~ containing 1 egg. It's in the same exact place as R-1 last year, WOW's nest.

Julie & I each did a watch in the afternoon. Mine was at the "new" (newly named - I've known of it for years) display area now dubbed HELICONIA (or "HEL"). I saw an unb DM consistently present in that rich way, & APY (DM).



DuVal,  
E. H.  
2002

## Journal

3 Apr 2002, continued.

Isla Boca Brava, Chiriquí, Panamá

3 April, cont.

After we reconvened, we carried nets from WEL3 to HEL and set them up where I'd just seen the males. We promptly caught the unBDM and when we went to close them there was an unB CB in a different net. I left 2 6-meters up & tied shut for a brief mist-netting foray some afternoon soon. We were late for dinner. Ryan & Becca did data entry all afternoon & got summaries (& vocs?) in for all of the last week for Ryan's data. It's still slow going, but better than before the recent database revisions. I stayed up late entering some of my data from the pile of untouched March watch sheets.

4 April 2002

I had scheduled mistnetting for today, but with the targetted unBDM of the week already captured, Julie & I did AM watches & PM data entry instead. I found two more new nests under construction near the EDM dance perches. One is in a small sapling just behind dp 2, where a nest failed last year (E-something. 21?). It's even in the same fork of the sapling. Amazing! I wish I had the maps of nest sites from last year.



DuVal,  
E. H.  
2002

## Journal

Isla Boca Brava, Chiriquí, Panamá

4 April, cont

If I return for a short field season next year, this will make it easier to just swoop in as chicks are hatching, take blood, get bands, & be on my way.

Julie & I entered "summaries" & "vocalizations" for 18 of her observations but didn't get to mine. Speed of data entry is still an issue, despite the streamlining that I did with John.

5 April 2002

Today was another dry season day - a howling North wind that made the plan to do a fourth watch a bit silly for today, but we persisted. Both of my morning watches had a lot of pip flights, but the females never went to the dps. They all seem preoccupied by finding nest sites. How much time does a female have between breeding & laying?

6 April 2002

I found 8 nests today - a new record! We've collectively found 30+ nests in the last week, most of which do not yet have eggs. The transitions are being anomalously synchronous. The wind kicked up in the evening, & people are burning their pastures on the mainland. I found five sea stars in tidepools below the



DuVal,  
E. H.  
2002

## Journal

Isla Boca Brava, Chiriquí, Panamá

restaurant, + one nest. Boxer treed a

Tamandua outside our hut at 10:30pm.

Oh! A few days ago (<sup>day before</sup> yesterday, maybe?) I found a grey-necked woodrail retreating through the undergrowth of BRI display area. Perhaps this is what John + Eileen saw, not a tinamou?

7 April 2002

The day was entirely overcast, with a very breezy afternoon. It feels like the wet season! Everything smells like smoke from the fires on the mainland. I saw dancing for a female four times in my first watch, & then the place fell quiet. Becca saw a (human) copulation at BRIDGE, on the trail, & Ryan saw another on the beach. Yick! BRI is now called "Snake-infested cesspool & quicke motel."

9 April 2002

Today was the day off, but Julie + I worked. She saw a probable copulation on one of her watches. My day was filled with small disasters - splitting my toenail in half during a post-work swim, having the pig dump out & roll on my clean clothes, having the seat of my jeans dissolved by battery acid.



DuVal,  
E. H.  
2002

## Journal

Isle Boca Brava, Chiriquí, Panamá

10 Apr 2002

The Catharus thrushes are in full swing, squabbling in the bushes & flitting about like manakins.

~~The pig escaped again, but I saved my clothes.~~ Their migration seems to be in full swing.

11 April 2002

We were awakened by the pig escaping, again, at 5:50am. Not the best way to start the day. I started out nest E-2 & found the female RRT feeding the chick. I saw a chick & an egg when I looked in the nest at 07:30, but when I checked again at 10:00, thinking of bleeding the chick, there were two chicks! I'm waiting until tomorrow to bleed them.

We discussed the seeds-under-nests paper idea after dinner, & the consensus is that we should proceed, though confounding variables like slope that the nest is on may make our results not-very-useful.



DuVal,  
E. H.  
2002

# Journal

Isla Boca Brava, Chiriquí, Panamá

12 April 2002

Today was significant because we took blood from the E-2 chicks (48 & 24 hours old), whose mother is RRR (SCTR). It was also the first day with any reasonable amount of rain - a few inches fell at night as we sat around playing Scrabble with Padra. Becca & I did 3 watches each, while Julie & Ryan did 2 watches & entered the vocalizations on their week of data sheets in the evening. The summary system streamlines it so that this much is possible, at least. I'll have to back & enter displays myself.

Temp: 77-90°F - the lowest high temperature we've had all season, I think!

Nest E-5 failed & Julie collected a fair-sized little pile of seeds from beneath it. I hiked to the gully past Claus & Mechtild's house & found two new nests, with one egg each. I would like to talk to them & see if they're still interested in helping out on the project - monitoring these nests would save some hiking time for us. E-12 is in precisely the same place as last year's E-AT, sharing up the theory that females re-use nest sites, or at least stick to the same area.

I took GPS coordinates for georeferencing.

It rains  
on fire  
today.  
Every year,  
the fact  
is in the  
park,  
burns it.  
Some



DuVal,  
E. H.

2002

## Journal

Isla Boca Brava, Chiriquí, Panamá

14 Apr 2002

I found a nest with one chick, 2 days old today - near the bottom of the FBE road (E-14). Evidence that there's more nest-searching to be done! I'll stake the nest tomorrow.

Again, the birds seemed particularly active in the afternoon. Julie saw a near-copulation at BTR that included 2-male display. There have been a surprising number of solo male displays that were effective this year. So if cooperation is not obligate, what are the conditions that lead to it, & why does it exist?

Are females visiting perches multiple times, & coming back to those they like to see solo displays? Do we ever record multiple visits? We have good evidence of "shopping" with BOB moving between perches & ultimately copulating - but it doesn't seem that her mind was already made up if she visited several perches serially before making her choice...

I saw the first ovenbird I've seen in a long while today - foraging in the leaf litter near SLN2



DuVal,  
E.H.  
2002

## Journal

Isla Boca Brava, Chiriquí, Panamá

16 April 2002

I went to David today to order new binoculars. Julie's are starting to leak, and Becca recently dropped hers on Main Street & knocked them entirely out of alignment. Eileen & John brought a waterproof pair that I ordered back in March & I'm worried - I didn't budget for buying one pair of binoculars, much less two! But they are our most vital piece of equipment... I ordered Bushnell Natureviews: we'll see what comes. Clint is maybe coming to Panama in a few weeks, and he can bring them then.

19 April 2002

Julie saw two copulations in one watch at SBE2 today, and one of her nests hatched. Becca worked on the cage we may use for captive alphas all afternoon. It's a 1m x 1m cube with a PVC pipe frame and surrounded by screen, with an easy-access panel for changing newspapers and doors that hook shut over nails. Elegantly made.



DuVal,  
E. H.

2002

## Journal

Isla Boca Brava, Chiriquí, Panamá  
20 April 2002

It was a 4-watch day today, so we're all exhausted & in bed by 8:30. Highlights: I found a brown vine snake eating a gecko-like anole that I didn't know existed on the island (or anywhere else, in fact). Their jaws were locked together & neither was moving, but it was clear that the snake was winning. I took many, many pictures. There's a dominance scuffle in progress at CAS - VGG (CM) was chasing everyone but the unSDM seemed dominant to him. (chased <sup>unSDM</sup> back when chased, & did pip flights & solo dances (no ♀) untested).

21 Apr 2002

Chick season is in full swing now - we have four nests on the table that need to be staked, all at once. That's in addition to four more <sup>from which</sup> ~~that~~ I've already taken blood samples. Becca & I each did a watch at BRI (I saw ARA & BOW dance for a female, as I'd been hoping to) & took turns staking nests. My nest near SEN1 had WB - (G) feeding - probably, unSD, who formerly nested in land



DuVal,  
E. H.  
2002

## Journal

Isla Boca Brava, Chiriquí, Panamá

21 April, cont

that was cleared for ~~John's~~<sup>Bob's</sup> fish camp. She not only ate the fecal sac, but first reached into the chick's gaping maw & pulled out some stringy white goo & ate it — 3 times. I've never seen THAT before.

Becca & I completed construction of the cage for a captive alpha, & it looks great — PVC frame covered with screening, with several types of perches inside & a system for hanging food & changing water. Now if only we can get him to eat ...

22 April 2002

We have 5 nests that need to be staked, all at once — and it'll probably be 6 tomorrow. I saw dancing for a female by YWV with 2 different  $\beta$ 's (2 different bouts) today, in addition to a wonderful solo display for a female by YWV that involved 3 near-copulations. Eventually



DuVal,  
E.H.  
2002

## Journal

Isla Boca Brava, Chiriquí, Panamá

24 May, cont YWV left in apparent disgust while the female sat on the dance perch, looking around casually.

25 May 2002

Yesterday was the day in David, and I actually took the day off today because I had simply started to burn out.

By the afternoon I was feeling energetic + took a hike to check nests. Ryan is suffering through a cold now, but no one else has shown signs of getting sick - so far!



DuVal,  
E. H.  
2002

# Journal

Isla Boca Brava, Chiriquí, Panamá

26

26 April 2002 & 27 April

Becca and I netted at BRL in the morning <sup>of the 26<sup>th</sup></sup> and afternoon, and caught 5 manakins on the last (after 5:30pm) net run. One of the 5, a green female who <sup>WGA</sup> had been unbanded, was unable to fly when released. There was no obvious injury, but, like several manakins before, she could perch but tumbled to the ground when she attempted to fly. As we have the cage ready for a captured alpha, we took her home and kept her overnight. In the morning she hadn't moved at all, + was still unable to fly. Becca + I gave her canteloupe juice dripped onto the tip of her beak from a syringe + she drank  $\frac{1}{4}$  -  $\frac{1}{2}$  cc. In the afternoon, she seemed more alert ~~and~~ though still unable to fly. She could leap between perches, so we released her at BRL again. When Becca searched the same area later in the day, ~~the~~ the bird was not to be found. Unfortunately she had a BP of 3, but Becca + I decided that it was



D. Val,

E. H.

2002

## Journal

Isla Boca Brava, Chiriquí, Panamá

26-27 April, cont.

better to seal the doom of the eggs + make sure the female had a fighting chance than to leave her to the snakes overnight, when she was on the ground.

Several nests were found to have eggs today, including one of the ones by Claus's house. I stalked the newly-hatched E-8 by ACA, + saw PYP feeding the chicks. That makes 3 years of chicks from her. Julie confirmed that BOB is the mother of a nest near BTR as well. Some females seem to be consistently successful. WVR's chicks in E-1 are gone, either fledged or eaten, + I saw WVR on the dance perch at BRI (5?), with ARA + BOW dancing (ARA eeked).

Still no success in catching ARA for the removal experiment. I paid the week's bill - \$157.45.



DuVal,  
E. H.  
2002

## Journal

Isla Boca Brava, Chiriquí, Panama

29

28 April 2002

ARA continues to elude us at BRI, despite our netting efforts. Clint called from Panama City and will be on Boca Brava in the morning. Today was the official half-way point of the season, so we had a party: piña coladas (generously matched by Frank), dancing with Elvy... We even got Ryan to dance. The restaurant ran out of gas for cooking dinner, so we made Kraft Dinner over my whisperlite on the platform where the second rancho used to stand.

It's hard to believe that the field season is already half finished!

30 April 2002

Today was the day off, and I mostly spent it with Clint. Becca stuffed a young male ~~sr~~ Sapphire-throated Hummingbird that Amelia found dead in the restaurant. Hummingbirds in general have become noticeably scarce in the last few weeks. For a while, the Rufous-Tailed Hummingbirds were showing up at most watches, hovering before us mere feet away. It's been at least ten days since I've seen a Rufous-Tailed, and longer since I've seen a Little Hermit.



E.H.

2002

# Journal

Isla Boca Brava, Chiriquí, Panamá

2 May 2002

I netted at BRI with Clint, targeting ARA for removal. No luck yet.

3 May 2002

We caught ARA and changed his bands to SRC for easier recognition. Clint was moving incredibly slowly as we closed nets and prepared to take the bird back to our holding cage, and I rudely snapped at him about it. He claimed that he would work while here, after all. I debated about keeping him in captivity vs. releasing him on Linarte, and finally opted for the latter. I paid Chino \$3 to take Clint, me, and "SRC" to Linarte. SRC flew away strongly, and I feel good about the decision.

The Swainson's Thrushes have disappeared entirely from Boca Brava, now. The migration has moved on.

6 May 2002

Clint and I target-netted the unbanded female who just hatched a chick by SBE1. We caught her and banded her WAW, and took a blood sample from the chick. A Swallow-Tailed Kite flew over second beach at lunch - the first I've seen on Isla Boca Brava.



E-H.  
2002

# Journal

## Isla Boca Brava, Chiriquí, Panamá

7 May 2002

I mistnetted for the unbanded RC female of J-5 in CAS, with Clint, in the morning. Clint was stung by one of the large red wasps and suffered from it for the rest of the day. At lunchtime, we packed up and went to Boca Chica to start walking to Horcencito. It's the first day of my annual vacation! (We didn't catch the unbanded RC, and I decided to try for her when I got back).

We walked about  $\frac{1}{4}$  of the distance to Horcencito before Carlos ("Gambute") picked us up in his taxi for \$1.50 each. Before that happened, I whistled in an unbanded DM <sup>along the road</sup> by imitating a pip flight. I heard him doing a mangled-sounding QR in a caprada off to the right (as you walk away from Boca Chica). It's the same place where I heard manakins with Eric last year: a cattle farm with a small house near the caprada.

In David, we stayed at the Hotel Toledo (\$18) and went to the movies.



2002

Road to Changuinola from David, Chiriquí and Bocas, Panamá  
8 May 2002

We took a bus across the Cordillera to Changuinola and spent the night there, as the border crossing had already closed. The difference in precipitation between the Caribbean & Pacific sides of <sup>Costa Rica's</sup> country is really amazing. The road passes Fortune Biological Station, and we passed a suspiciously biologist-looking man in foul weather gear at a crossroads. The road passes a tree with 6 or so oropendola nests, and there is a profusion of Ngöbe villages just over the mountains.

Puerto Viejo, Costa Rica

9 May 2002

We stayed at Casa Verde in Puerto Viejo, Costa Rica, which caters to poison dart frogs. I saw Dendrobates pumilio and D. auratus in their garden & mini-vivarium. Puerto Viejo is overrun with American ex-pats & backpackers, even in the off season, but it was still a lovely place. Hot showers!

10 May 2002

We hiked down the black sand beach in the morning, accompanied by three local dogs, and I caught a D. auratus (green with black splotches) up a side street. It



2002

Puerto Viejo, Costa Rica

had two tadpoles clinging to its back with a layer of slime between them! It's the first time I've seen frog parental care in action.

Sixaola, Costa Rica, to David, Panamá11 May 2002

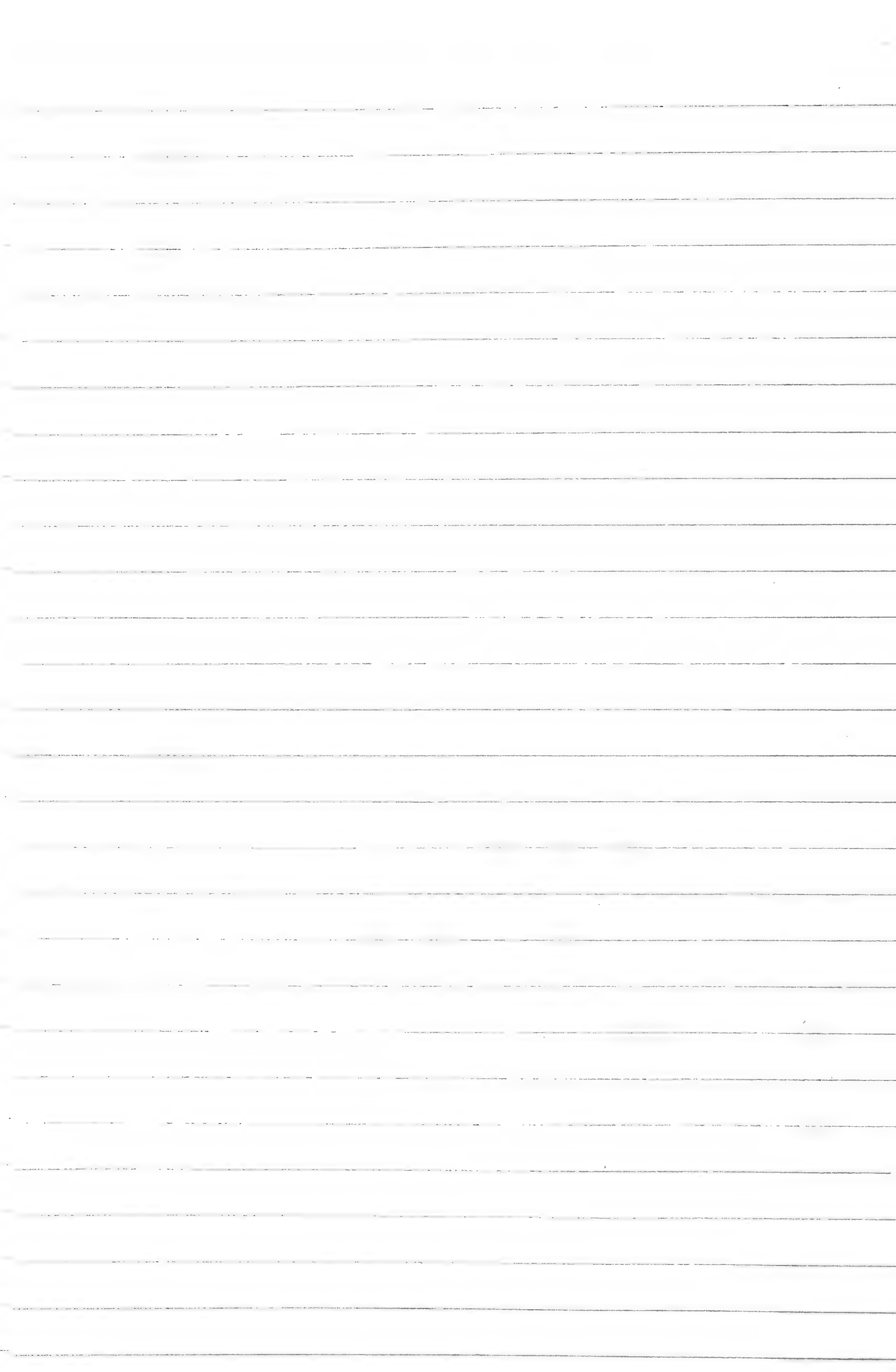
We returned to Panamá and David in a long day of travel. I had to cross the Sixaola-Guabito bridge a total of five times after we had solved all problems with tourist cards, lost bags, etc. And I do hate that bridge. The road at Sixaola was underwater, and we had to hike into town along the railroad tracks, with a procession of locals.

Isla Boca Brava, Chiriquí, Panamá12 May 2002

I returned to Boca Brava and Clint left for Panamá City. Chris Lorian, Julie's husband, is on the field site to visit and is being helpful in the same sort of relaxed way that Clint was. Everything seems to have been handled well in my absence.

14 May 2002

We began counting seeds in the afternoon for our "seed experiment" and got



E.H.

2002

# Journal

## Isla Boca Brava, Chiriquí, Panamá

May, cont through most of the samples collected to date.

I don't know whether this idea is going to pan out or not.

15 May 2002

Julie and Chris left with Frank to take their vacation in Puerto Viejo, Costa Rica. It's still very dry here.

16 May 2002

I skipped the morning watches to sort data sheets and assess where we are in the task of identifying alphas and betas. In the ~~ear~~ late morning I went to check nest E-21 and found that the nest had partially disintegrated, forming a hole that dumped the chick and egg out. I had checked it two days before and found one chick just barely peeking his way out of the egg. I picked up and could hear his steady "tap, tap, tap." I searched through the leaf litter below the nest and found no sign of the egg, ~~§~~ but I followed a faint peeping noise to the chick. He was getting cold, but was still moving around and the female was frantically rubbing me.



Isla Boca Brava, Chiriquí, Panamá

May, cont. I fixed the nest with dental floss, replaced the chick (after taking a blood sample in case he didn't make it), and got the female's bands: RWY. When lunchtime came, it began to pour. It was our first real day of the rainy season. Becca and Ryan were still sitting on the beach when I got there, soaked through and grinning. Boxer protested our ridiculous behavior, sitting apart with his ears down & head down, waiting for us to come to our senses and go home. When we did head back, our shoes were completely full of water before we reached first beach. The termites have just started the annual post-rain blight.

17 May 2002

It was the four-watch day, and I also vegged nest E-13. Claus & Mechtildt are gone for the month, so I briefly took shelter on their porch when it began to rain at 5pm. Eventually I struck out for home. There are more termites swarming than there were yesterday, and dragonflies seem to be diving through the clouds, eating them.



E.H.  
2002

# Journal

## Isla Boca Brava, Chiriquí, Panamá

18 May 2002

ARA (now SRC) has returned to the BRI display area! So much for the idea that manakins won't fly across water. SRC was the only male around for most of my watch at BRI, and he was extremely active. BOW was nowhere to be seen. We didn't watch BRI on the 19<sup>th</sup>, but Becca saw a chase that involved 2 DM's on the 18<sup>th</sup>. Unfortunately she didn't get the bands on either male. It may have been an outraged SRC chasing BOW.

I nestsearched in the gully east of LOT3 and found a nest with two chicks (!). As I bled them, WOW (#300) mobbed me as aggressively as a manakin can mob.

In the afternoon, Ryan and I set nets for AYA (an ♀ to be removed) at ACA4 and opened them for about an hour.

19 May 2002

We caught AYA almost immediately this morning at ACA4. I decided to try holding him in captivity, since relocating <sup>males</sup> ~~sites~~ to a convenient island does not seem to work.



E.H.  
2002

# Journal

## Isla Boca Brava, Chiriquí, Panamá

May, cont. Ryan and I put Miconia fruit, Euphorbiaceae fruit, and some branches with edible-looking red berries in the cage, and left him alone. He was very active all day long, searching for a way out of the cage.

We re-opened the nets after getting AYA settled, hoping that we might catch WBY (DM) for a blood sample before his current beta status changes. We didn't catch WBY, but we did have several other interesting captures:

- 1) GOR, a ♀, had an infected right leg. The red band was immobilized by the swelling, so we removed it and left her GOX. The aluminum band didn't seem to be causing any problems, so we left it.
- 2) NOP, a chick from 2000, is a full CB
- 3) ~~AA~~P (DM), who is easily confused with VIP and AVP, both DMs. One or two of these males are betas at SBE2 + WEL3. I changed his bands to a more recognizable AYS.

Becca found a dead iguana in MAN, so fresh that it was still bleeding from the mouth. It appeared to have fallen from a tree. We dissected it in the evening.

Stomach contents: leaves.

Julie came home from her vacation.

There seem to be more hummingbirds in the area, now.



D. Val,  
E. H.

2002

## Journal

Isla Boca Brava, Chiriquí, Panamá

20 May 2002

This morning I found the captive DM, AYA, dead on the floor of his cage. It appears that he never did eat, and that his high activity + metabolism rates plus non-existent fat did him in: he was directly below the perch where he had roosted the previous night. Becca, who is much better at specimen prep than I am, spent the entire morning skinning him. I forgot to mention that we should save tissue samples and syrinx, and she discarded the body before I returned home in the afternoon. She did measure the testes, however.

21 May 2002

We all went to David today, and Becca began her vacation. I went with Becca + Ryan to the immigration office to extend their visas. That went smoothly, but when I tried to buy my tourist card the woman in charge pointed out (rather severely) that I was not properly stamped into Panamá. When I entered at Guabito, they stamped "salida" instead of "entrada." After much arguing about how I couldn't afford the time or money to go to the other side of Panamá and have the Guabito office fix things, I had to give in. I got a letter stating that I was on my way to correct a clerical error, just in case I was stopped by police



D. Val,  
E. H.  
2002

# Journal

## Isla Boca Brava, Chiriquí, Panamá

21 May, cont. in between David and Guabito. Ryan + Julie went back to Boca Brava, and I stayed with Becca in David for the night. We did three hours of email + saw Spiderman before calling it a night.

22 May 2002

I left for Changuinola on the 6 am bus, arrived at 10:30, took a taxi to Guabito, had the passport re-stamped 10 minutes later, and was on my way back. I made it to Boca Brava at 8:30 pm, after catching the Panama-David bus at the crossroads of the Inter-americano and the Changuinola route; waiting for a lift for 1 1/2 hours; + waiting for a flat to be changed halfway through the Horconcito - Boca Chica leg. 6-year-old Jason befriended me at the Horconcito crossroads (initially thinking I was Megan Haggerty) and gave me mangoes for the road. Moises gave me a cut-rate boat ride (\$1.10 because it was all I had, plus a beer tomorrow) to the island.

23 May 2002

Just Julie, Ryan, + I worked today, as Becca's vacation continues until the 25<sup>th</sup>. Frank



DuVal,  
E. H.  
2002

## Journal

### Isla Boca Brava, Chiriquí, Panamá

23 May, cont. and Yadira are in Golfito until tomorrow. Amelia found a 6' boa in the kitchen yesterday, and a viper (so she says) on the stairs by her cabana in the morning. There's a black-hooded antshrike nest with two chicks close to fledging along the path down to the second beach (near SBE5). When I stopped to check on it today, the female fluttered away, mostly walking conspicuously away from the nest rather than really trying to fake injury. The male sat motionless on the side of the nest.

24 May 2002

Julie and I got up at 5:45am to jog the length of the field site. It was crazy, but I felt more energetic all day long. Julie saw two snakes today, much to her horror. At WEL3 I saw 2 DMs dancing for a "♀" who then started giving a mangled, warbly eek call. Babies dancing? Unfortunately I couldn't see "her" to see if she had bands. Julie also saw some of this year's chicks at FBE, where the DMs seemed to mistake one for a female and do SF-2.



E.H.  
2002

# Journal

Isla Boca Brava, Chiriquí, Panamá  
25 May 2002

It rained in the afternoon, cutting our third watch short. Becca and Chris came back to the island. Ryan saw a "silvador" snake at Bridge (Clelia clelia?) that carefully investigated his backpack and nullified a good 40 minutes of his watch. I banded the E-26 chicks (♀ = wow), one of which got band #500 — we've come a long way! 3½" rain

26 May 2002

It started raining during the first watch of the day, twenty minutes in, and we all trooped home to do data entry. We set up shop in the hammock holder with two people entering vocalizations on the computer, one organizing nest sheets, one counting seeds for the seed experiment, and me catching up on these field notes — there are some huge holes in this account of the field season.

General observations for the year: the rainy season was surprisingly late; we've seen many solo displays for females (as in not preceded by 2-male dances/displays; we've seen more copulations than in any previous year (at least partially due to the larger number of observers); + we've found nests of two (?) females who we saw copulate (AYR was one).



2002

Isla Boca Brava, Chiriquí, Panamá27 May 2002

Chris Lorian staked Becca's nest near TCJ2 without success today, then helped me set nets around SLN2 to try to catch the unbDM that frequents the area. Otherwise, it was watches as usual. Ryan left in the morning for his Boquete vacation and won't be home until Friday.

28 May 2002

Today was the "day off" so I worked a half day, netting at SLN2 (I caught a non-target DM, APP, and an unbG, new GBG), staking Becca's TCJ2 nest & her nest near BRE3, both of which have chicks. Yesterday I checked E-27 and found GPA sitting on the side of the nest — the easiest way to get female bands! Her nest this year is about 30m from the one last year. I'm going to end up with 90 nests from about 25 females! But any nest is a good nest.

29 May 2002

I intended to mistnet for unbanded DMs today, but never quite got my act together. Instead



E.H.

# Journal

2002

## Isla Boca Brava, Chiriquí, Panamá

May I did watches at places where I intend to either catch an unbDM or remove an alpha, eventually — CTS, SLN2, SNK. Julie staked nest B-12 and Becca staked B-15, both without success, but as I walked to SLN I passed B-12 and saw WSP(G) sitting on the side of the nest. She is the female that Julie saw mate multiple times at SBE2, and I'm delighted to have blood from her chicks.

30 May 2002

Julie & Becca did watches, mixing in the video camera recordings along with their other duties, today. I'm hoping for a good recording from, at minimum, each of the main display areas. I mistreated at EDM for GAG all day, without luck. I did, however, catch GVA, the  $\beta$  from BTR display area. One more hormone sample down... Still no luck staking the B-15 nest.



2002

Isla Boca Brava, Chiriquí, Panamá6 June 2002

Today was a slow start for all - slowest for Ryan who opted to stay home and nurse a not-too-serious cold. I set the video camera at SBE2, hoping for some better-quality pictures of dancing for females; then I ~~open~~ set nets at SBE1, targeting a AWP for removal to Isla San Jose. I did eventually catch AWP at nearly 5:00, and couldn't find a boat to take me anywhere. Frank eventually came back from 'checking the valves' and very graciously took me to the mainland directly east of Boca Brava. It's a bit farther away than Lirante, but still very close. We thought of keeping him in the cage overnight, but he was quite shocky and wasn't moving around much. He was perched on the lowest PVC support beam of the cage when I took him out, & he didn't resist at all. We did feed him some strained banana mixed with water at 6:00pm. When the banana water was dripped onto his beak, he drank it fairly readily.

Other highlights for today: I found two intact eggs below the entirely collapsed E-35 nest. I intended to blow out the



W. H.  
E. H.

# Journal

2002

## Isla Boca Brava, Chiriquí, Panamá

June, contents and accession them in the egg  
ant. collection, but I promptly left them  
(and nest E-26) near SBE1 in my  
haste to get AWP back to the cabañas.  
There were large cat prints in the  
dirt on Frank's truck hood this morning.  
I took 2 photographs. According to the  
Fiona Reid book, they are most likely  
ocelot.

A flycatcher just flew into the rancho after  
flailing against my plastic wall for 40 seconds or  
so. He circled the light several times, then  
flew out. Grey head & chest, beak black,  
breast yellowish, whitish on 2 secondaries. I  
couldn't see how wide his beak was. He  
was slightly larger than a yellow-green vireo.

June  
7 ~~April~~ 2002

The beta<sup>(AWW)</sup> of the freshly-reMOVED alpha  
(AWP) was observed doing a solo display  
for a female today. It was interrupted by  
Boxer, who galloped through the middle of  
everything, of course. The data is on Ryan's  
late-morning watch. It threatened rain  
all afternoon, but nothing happened. Julie  
saw a copulation at MAN, with  
a 2-♂ display by RGY and an unbdM.



Dolal,

E.H.

2002

# Journal

Isla Boca Brava, Chiriquí, Panamá

10 June 2002

I did watches today, including one at WEL4 where I'm hoping for some more definitive  $\alpha/\beta$  evidence so that the perch can be included in the  $\alpha$  removal experiment. I found two nests with eggs back in the MAN area - we're just about at the point where eggs laid will not hatch before we leave the study site on July 1. Julie found a nest at OCV with 2 eggs, as well. Everyone is tired.

11 June 2002

Today was the day off, so I did observations at ACA4, SBE1 (the current  $\alpha$  removal sites) and SNK. (where I'm hoping to do the next removal...?) Nothing very exciting was going on in any of those places. I'm worried about including SNK in the removal experiment because the beta partner remains unclear. BSI is the clear alpha, but displays with at least 2 males for females (WRR is most common, but has only been seen 2x) and QR's with 4-5 males daily, it seems. I guess WRR is the prime suspect, though if any of the others inherit it still may be a benefit of dp attendance & cooperation.



E.H.  
2002

Journal

June  
12 ~~April~~ 2002

Isla Boca Brava, Chiriquí, Panamá

I took the day "off" to do data entry & try to think about the upcoming ISBE poster. The data has come a long way, but the poster is still lagging. Everyone else did watches, which were particularly slow, and the day was cut short by rain in the afternoon.

13 June 2002

I think it's a sign that I've become delusional about how much time I have left here that I recorded yesterday's date as the 12<sup>th</sup> of April. I set nets at SNK to try to remove BSY for our  $\alpha$ -removal experiment. AWW is still actively ruling SBE1, and Becca saw him dance for a female with another male but missed the other male's bands. The lek of Little Hermits ~~at~~ inbetween SNK and CCL is in full swing, all of a sudden. Julie mentioned thinking that she heard them a few days ago. It grew very dark and stormy in the late afternoon, but merely sprinkled until 8:00pm, ~~then~~ when the downpour began. In all, we got 2 1/4" of rain. We all went to Meghan's house in Boca Chica for dinner and ~~thanks~~ only to the goodness of Elvy made it back to the island to sleep.

CYS (SLTC) chick from this year mobbed me when I caught WOW (TC) at SNK



E.H.  
2002

# Journal

Isla Boca Brava, Chiriquí, Panamá

14 June 2002

I netted for BSY at SNK today, though with only two 6m nets. There aren't many places where that bird flies - as attested by his long stint of unbandedness. I'm having a hard time balancing the opposing pulls of removing alpha males, catching unbanded while I can, and doing observations to try to boost the sample size just a little more.

Masked Fitzinger have been active on the island lately. Becca saw them at GUL 2 in the last week, and I've heard them several times there and in other parts of the study site.

A Grey-necked Woodrail walked by me about 15 feet away as I was waiting to check nets at SNK. His legs + eyes were both a stunningly bright red. I also surprised a Little Hermit who flew to his display perch four feet away from me as I was nest-searching. I froze and he fluffed out his feathers, stuck out his tongue repeatedly, + bobbed his tail (but didn't sing). Finally I had to continue + he left in great alarm.

I staked nest E-29 and the female is an uns SLTC.



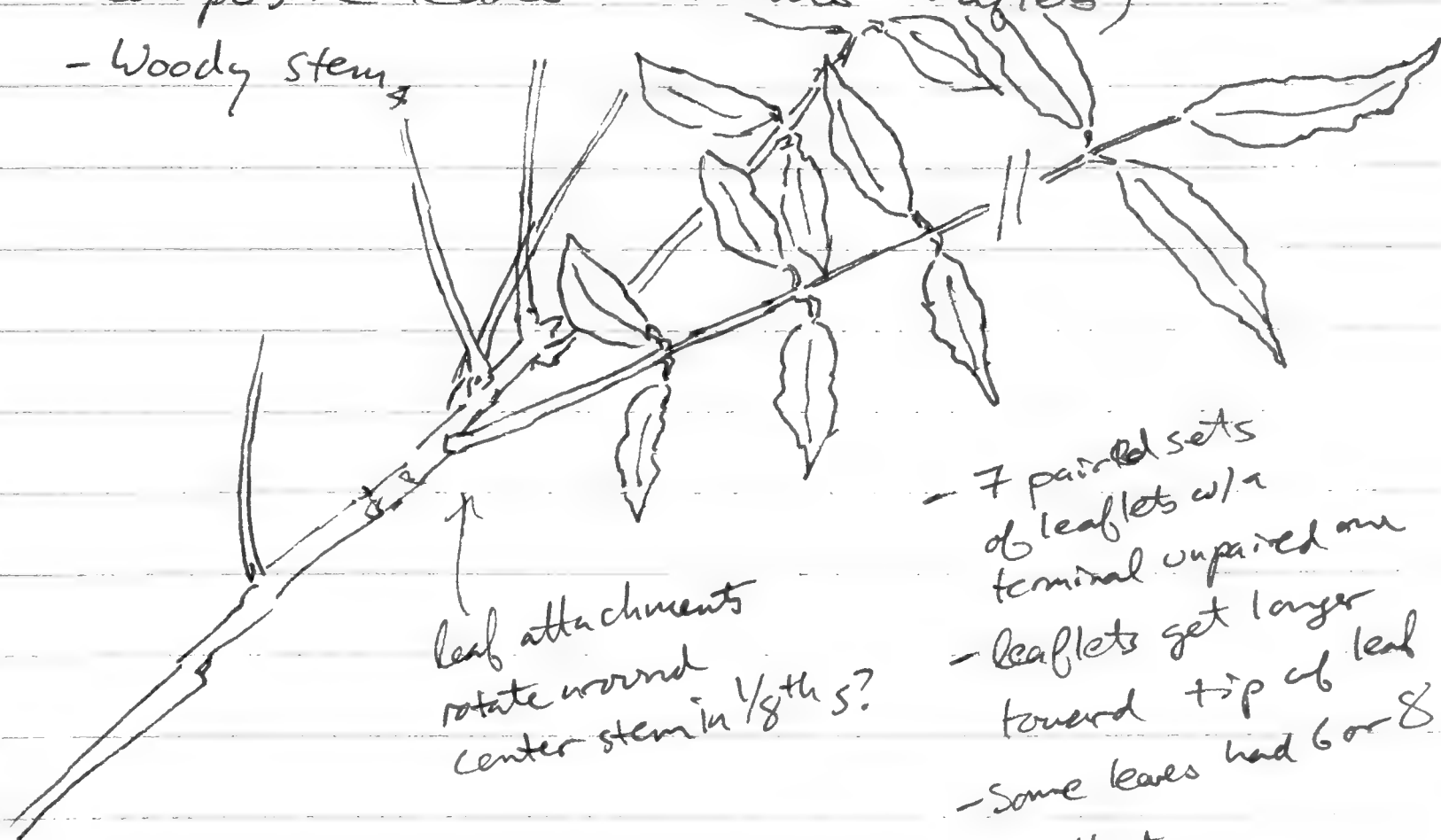
E.H.  
2002

# Journal

Miscellaneous Vegetation Samples - nest #s refer to 2002  
nest codes; for species ID  
if possible

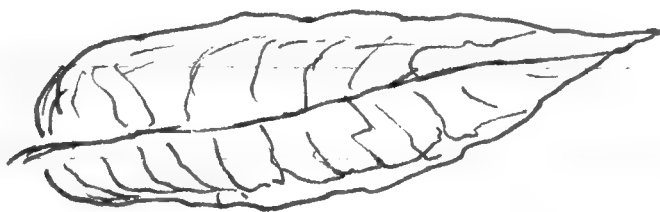
Nest B-9 ; small tree

- leaves in clusters at the ends of stems
- composite leaves (alternate leaflets)
- Woody stems



- 7 paired sets of leaflets w/ a terminal unpaired one
- leaflets get longer toward tip of leaf
- Some leaves had 6 or 8 leaflets

leaflets have a wavy edge  
veins are simple: (hard to see on the leaf)



tip sharply pointed

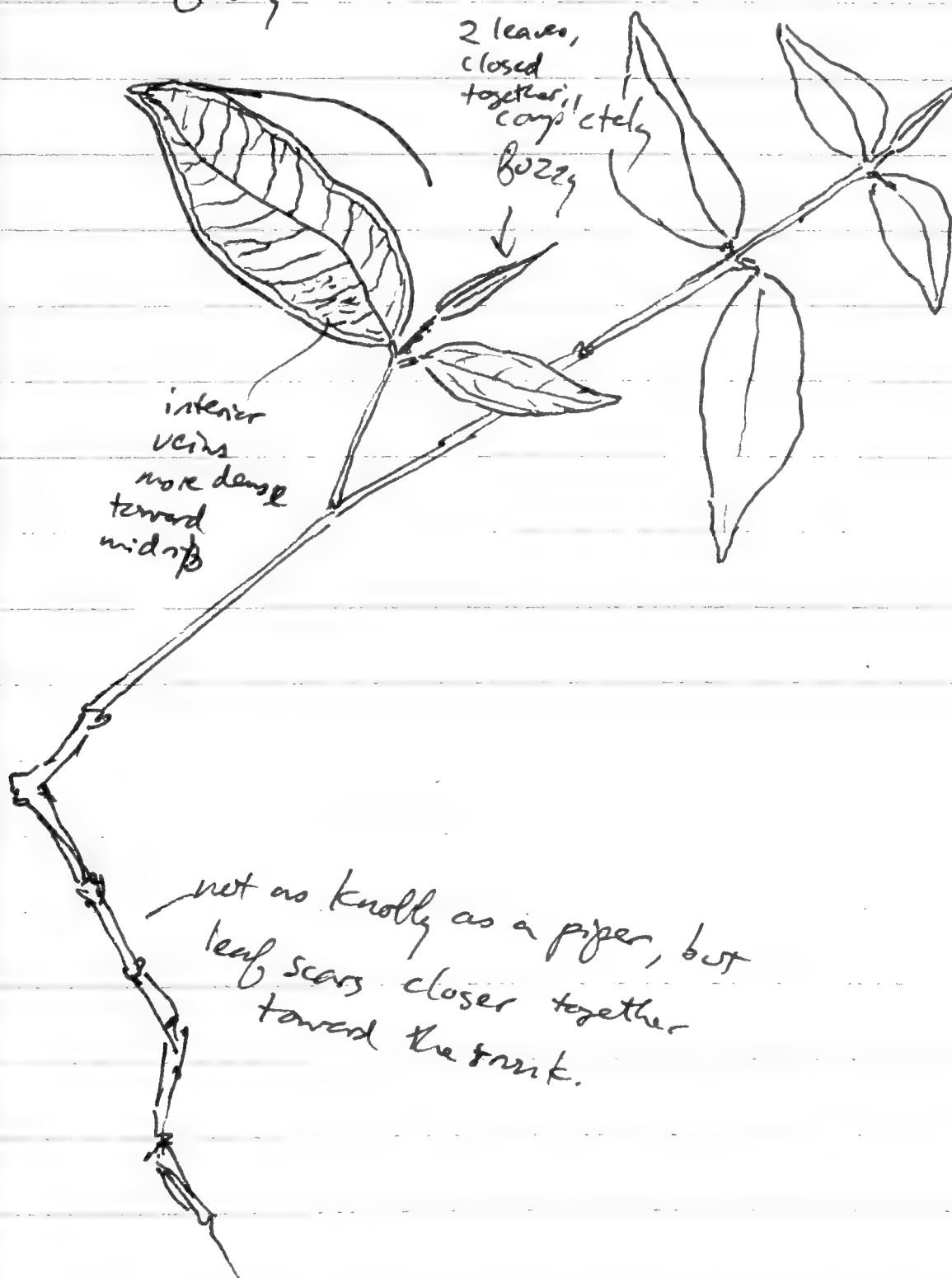


C. H.  
2002

# Journal

## Nest B-X

- new leaves fuzzy
- leaves attach opposite
- old leaves not glossy - very slightly fuzzy?
- finely veined



2 leaves saved



E.H.  
2002

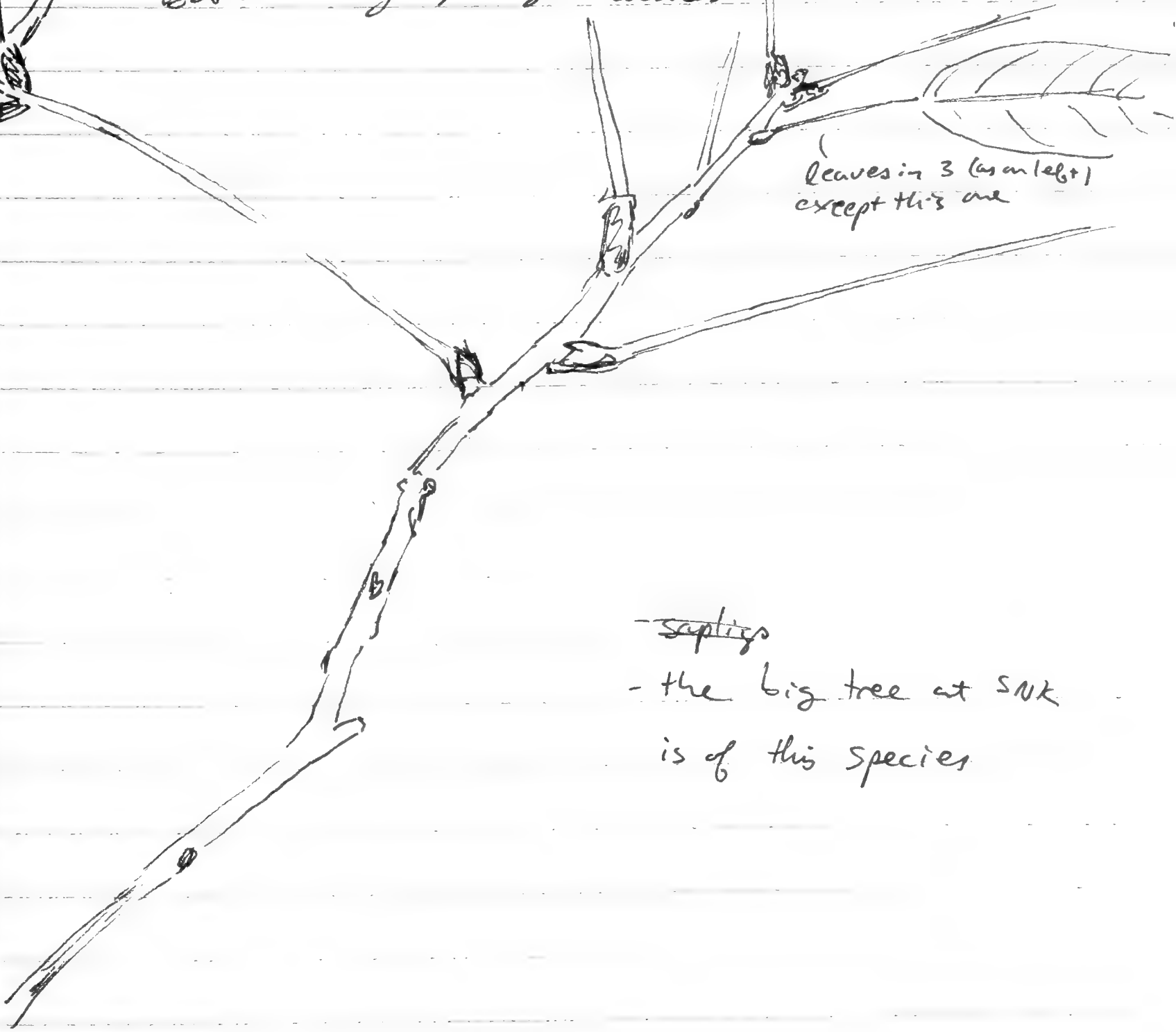
# Journal

B-AC

- leaves in groups of 3 on long stalks
- thickened base of each leaf attachment and each stalk attachment; leaf sl. overhangs attachment
- strongly veined; veins attach alternately to midrib
- no inter line of veins along edge of leaf
- leaves are smooth, slightly glossy
- bark rough, ridged almost



(leaves in 3 (as on left) except this one)



- ~~saplings~~
- the big tree at SNK is of this species

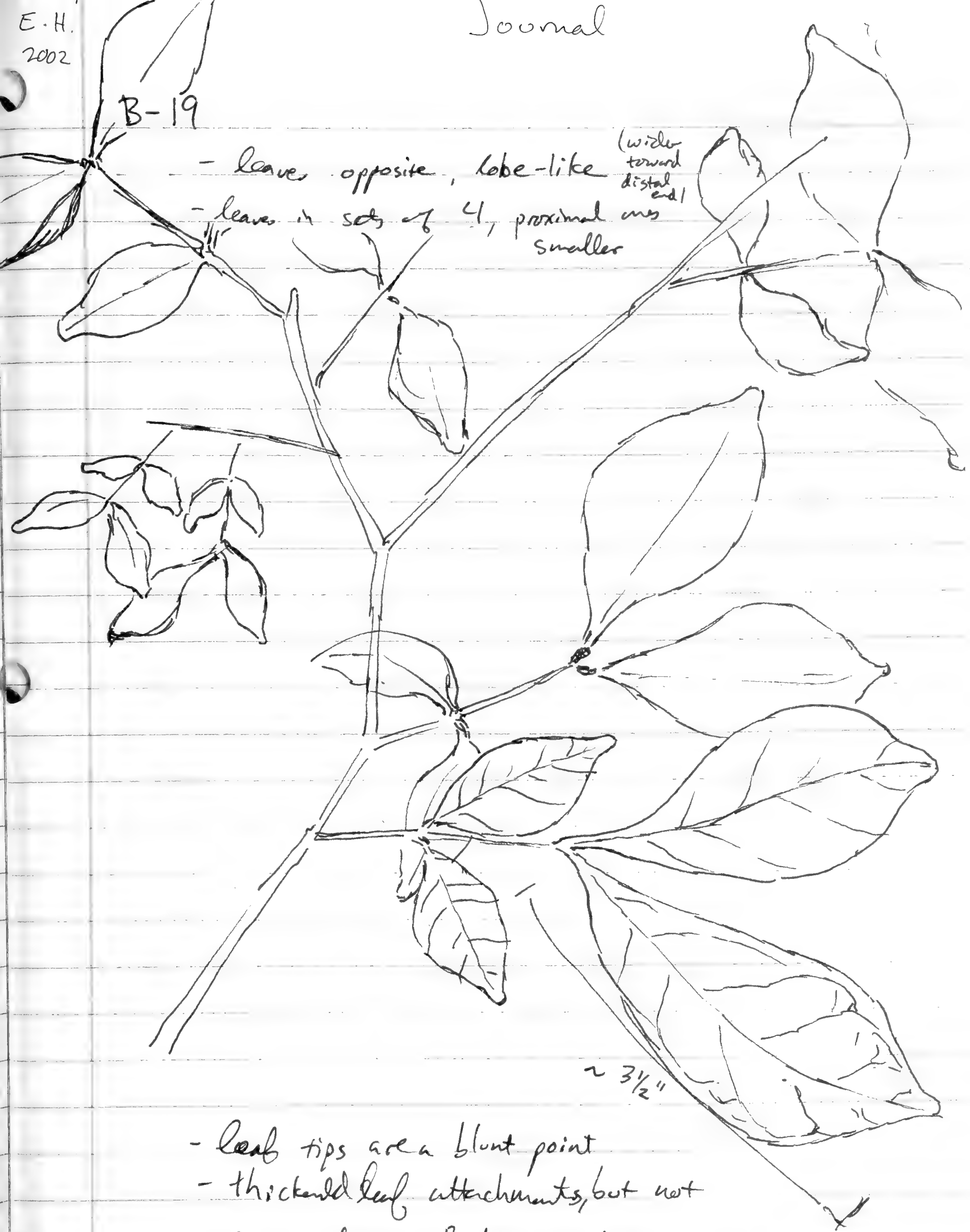


E.H.  
2002

# Journal

B-19

- leaves opposite, lobe-like (wider toward distal end)
- leaves in sets of 4, proximal ones smaller



~ 3 1/2"

- leaf tips are a blunt point
- thickened leaf attachments, but not so much as B-AC species
- veins are alternate, slightly irregular



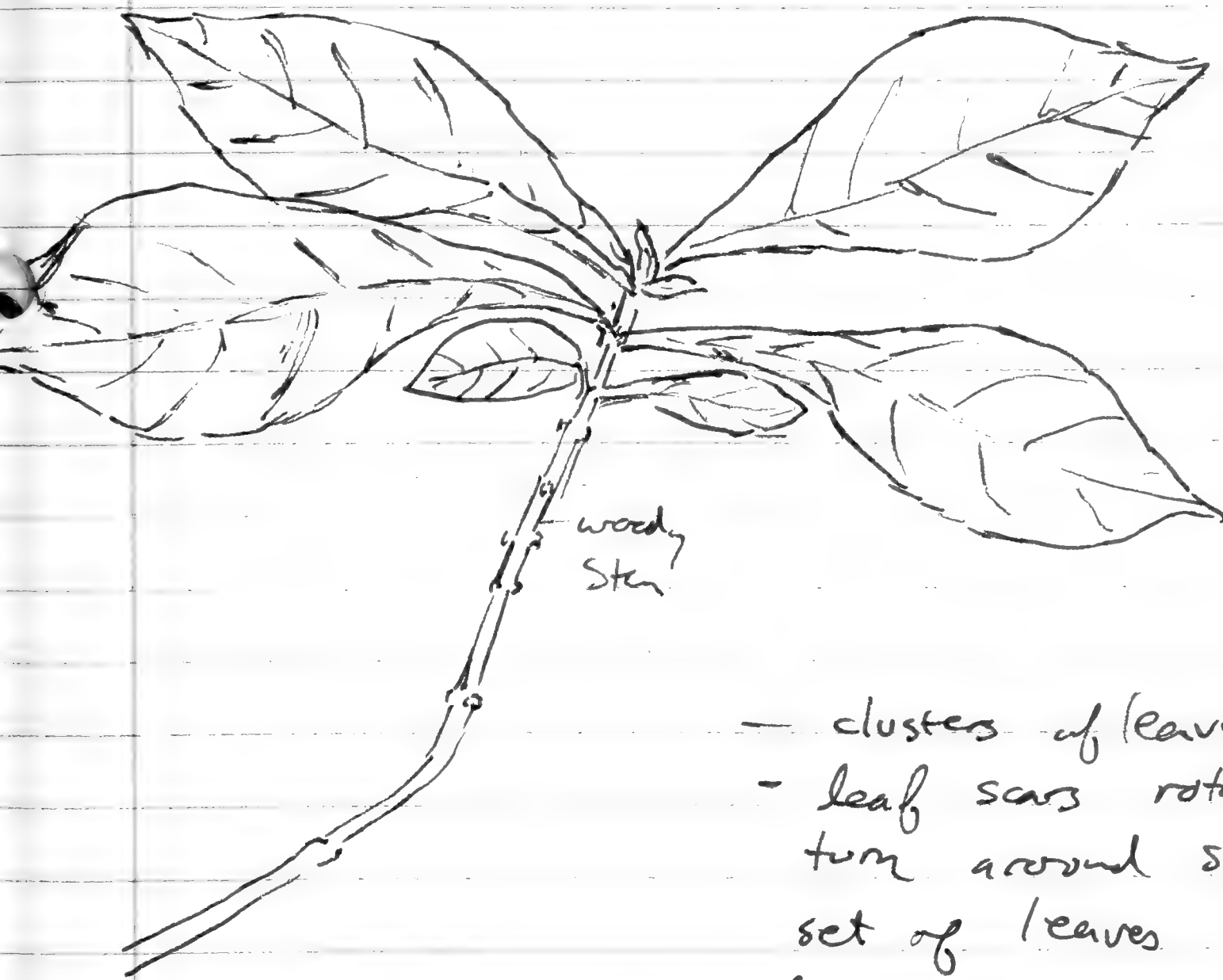
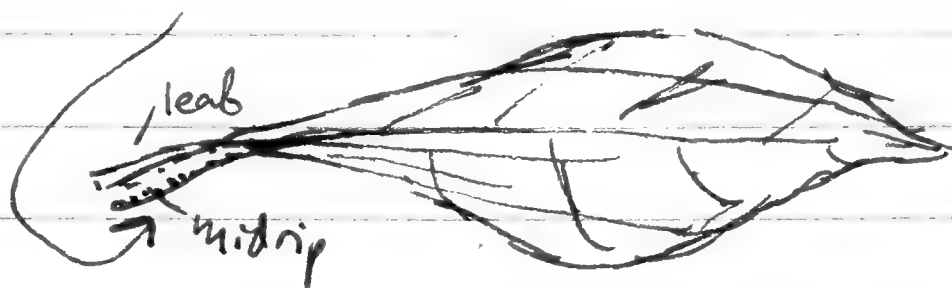
E.H.

2002

# Journal

Nest J-2, B-H, B-8

- leaves fuzzy
- sure I ID'd this one at SRI in 2000
- base of leaf continues on the top of the midrib as it connects to the stem



- clusters of leaves
- leaf scars rotate  $\frac{1}{2}$  turn around stem w/ each set of leaves
- leaves alternate

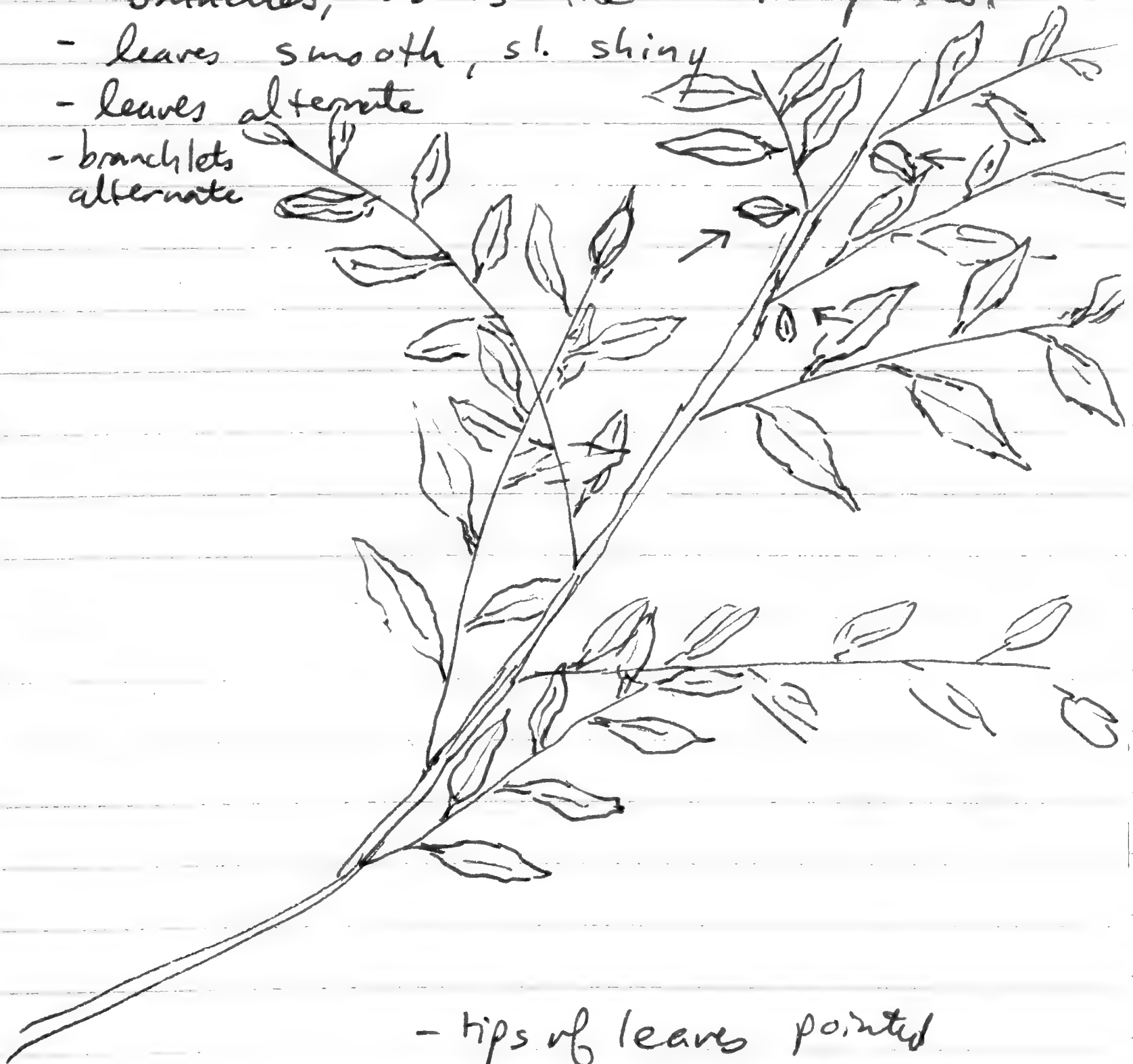


E.H.  
2002

# Journal

B-20

- can be found on left side of gully just past HEL as you walk N.
- leaves wavy, compound
- leaves NOT clustered at the tips of branches, as is the B-9 species.
- leaves smooth, sl. shiny
- leaves alternate
- branchlets alternate



- tips of leaves pointed
- 1 small, broad leaf attaching under the base of the & distall branchlets

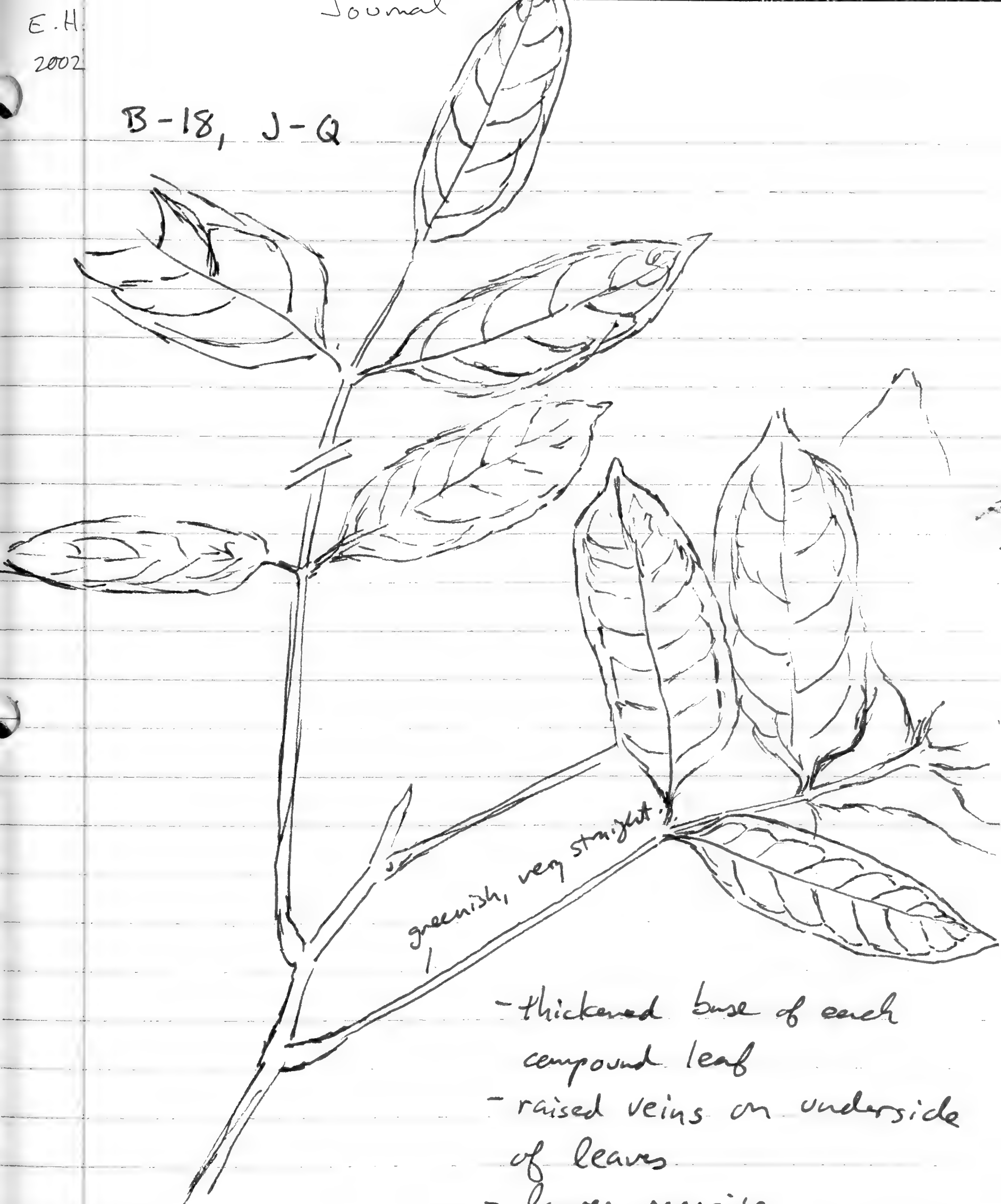


E.H.

2002

Journal

B-18, J-Q



- thickened base of each compound leaf
- raised veins on underside of leaves
- leaves opposite
- slight point on end of leaves
- leaves ~ 4-8"



E.H.  
2002

# Journal

B-?

Similar to B-18 species, but

1. underside of leaves sandpaper
2. leaf petiole is a. thickened & dark  
b. slightly upcurved
3. midrib is well-defined & raised above leaf surface, especially at the base of the leaf.

Veins similar - both in pattern & the fact that they're raised on the underside of the leaf.



Leaves smooth on top, dk green



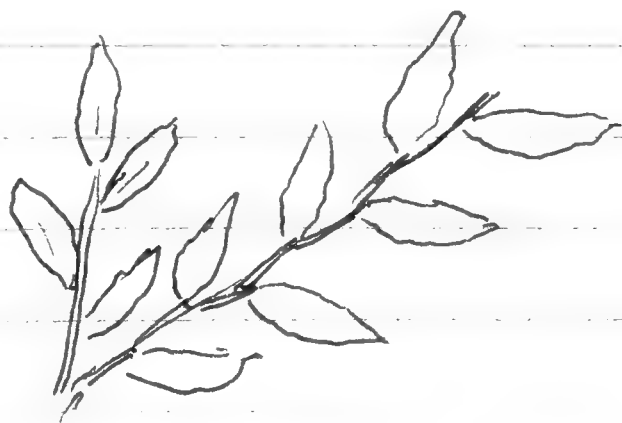
B-3

- Similar to sp 3, but 1) lacks the gland spots

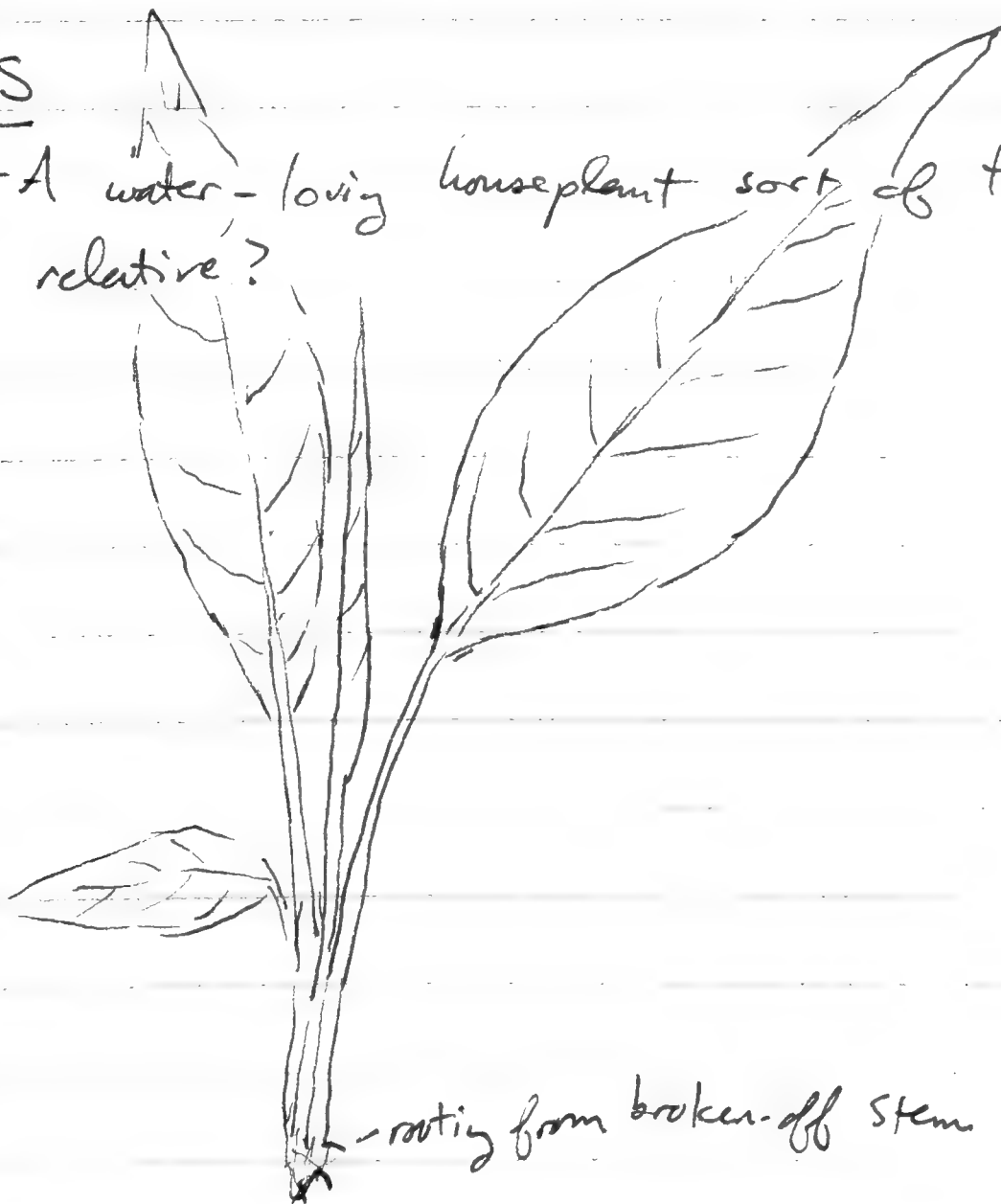
2) leaves are not so glossy,

wavy edge to leaf, but smooth edge

leaves alternate, many on one stem  
pointed tip

J-S

- A water-loving houseplant sort of thing; philodendron relative?



- rooting from broken-off stem



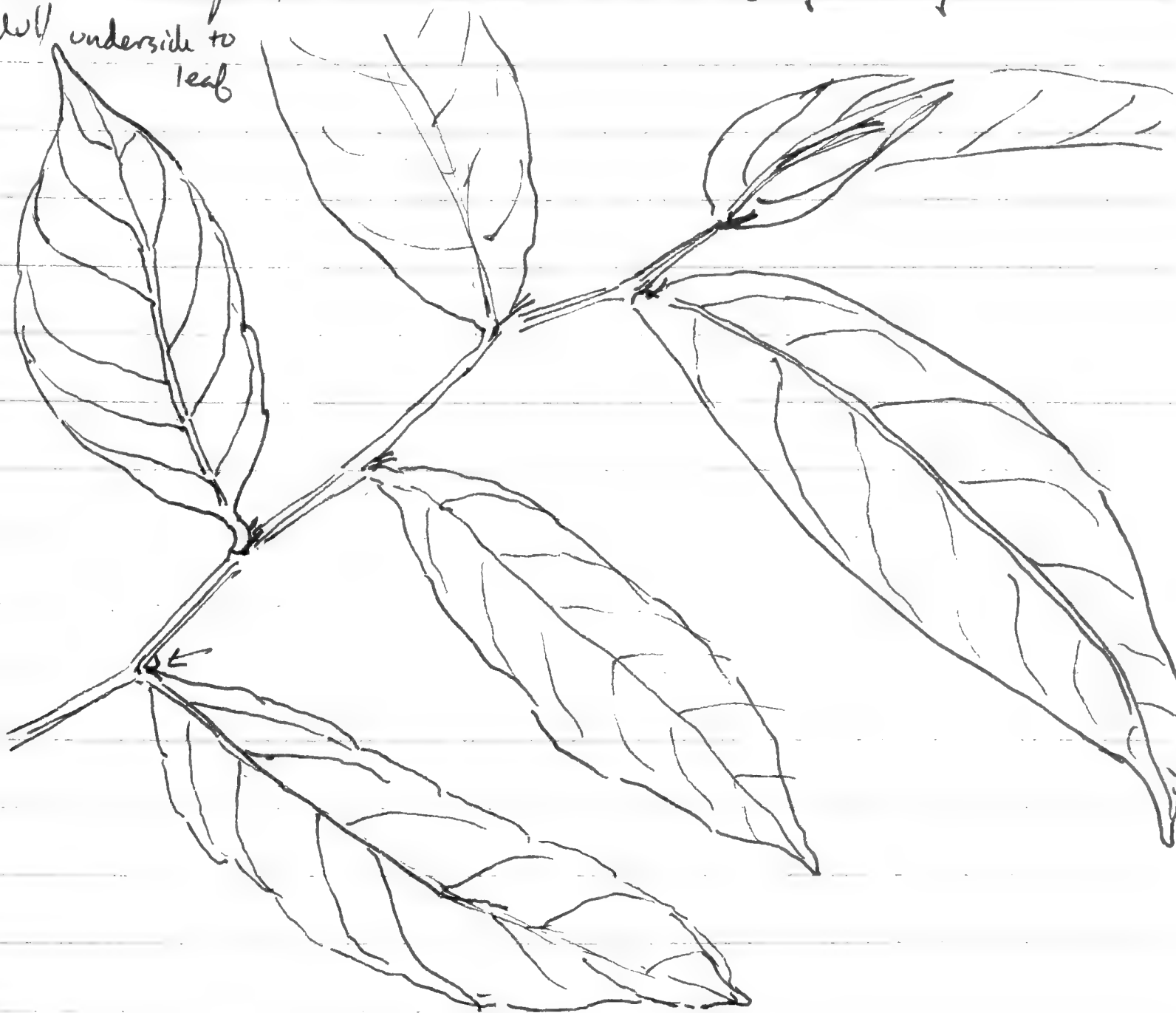
E.H.

2002

# Journal

R-5 (?) at SNK

- leaves have a serrated edge
- leaves very glossy, light green; new leaves a very light yellow-green
- red clustered berries; I tried giving them to AYA w/o luck
- <sup>branches</sup> ~~leaves~~ dangle/droop on the tree, somewhat
- 2 little pointy things @ the base of each leaf
- veins protuberant on underside of leaf
- dull underside to leaf



leaves  
larger  
than  
this one

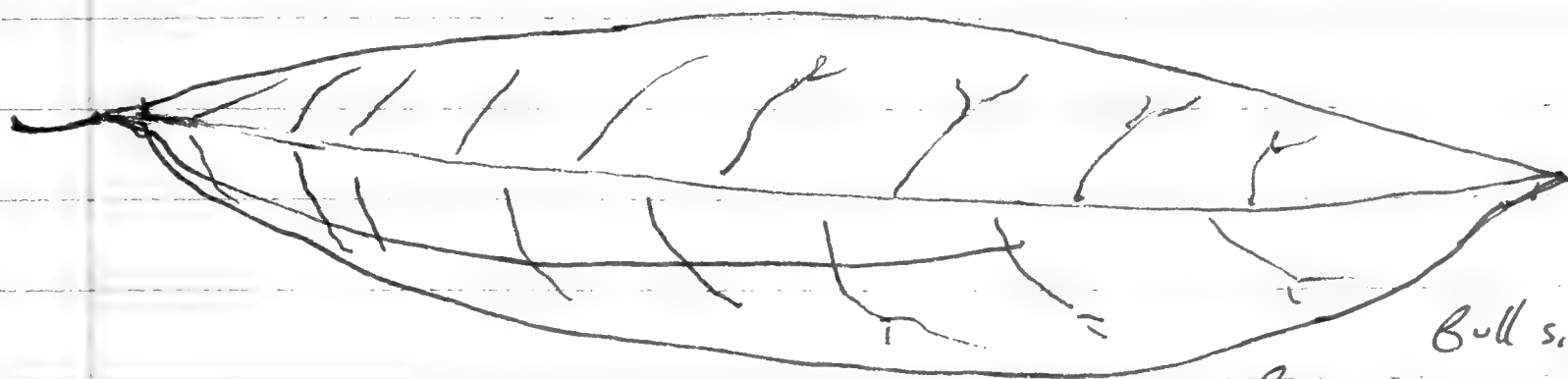


E.H.  
2002

# Journal

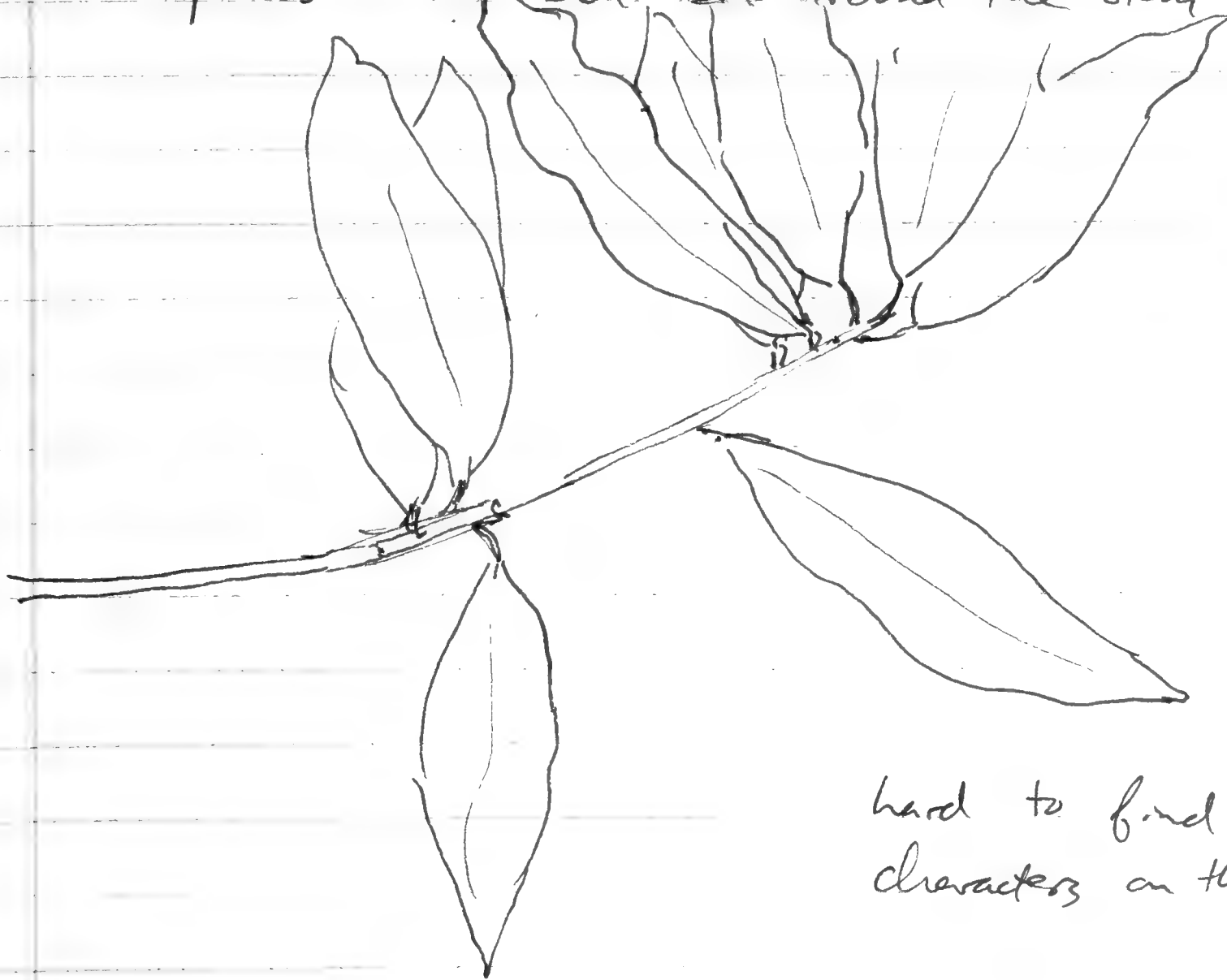
E-31

- leaves have a slightly minty smell
- smooth edge, wavy (like sp3)



Bull sized  
leaves very regular &  
evenly-proportioned.

- leaves alternate, rotating attachment  
points  $90^\circ$  each ~~time~~ around the stem



hard to find  
characters on this one!



## Display Perches 2002

# Times Observed	3x/wk	2x/wk	misc - as possible
Perches	1. WEL 3	1. CCL 5	? CAS 1
	2. SBE 1	2. BTE 1	LOT 1
	3. SBE 2	3. WEL 4	<del>*</del> SNK 1
	4. CCL 1	<del>*</del> 4. MAN 1	CCL 2(?)
	5. CCL 4	5. TCJ 2	<u>FNR/LHL 1</u>
	6. (SBE 3)	6. TCJ 1	TCJ 3
	7. SLN 1		* SPY 1
	8. ACA 4		PHT 1
	9. FBE 1/2		BTE 3
	10. BTR 3		<u>unnamed</u> - between WEL + BRI
	11. GUL 4		* <u>unnamed</u> - near LOT 1
	12. EDM 1		* <u>unnamed</u> - near MAN
	BRI 2		

\* = unBDM present previously

~~\*~~ = unBDM confirmed in 2002

Randomized removal experiment perches:

1. FBE 1/2
2. BRI 2
3. WEL 3
4. SLN 1
5. BTR
6. TCJ 1

• 92 •

E. H. DuVal

Field Notes

2003

General Index

1) Catalog EHD 021 - 022

2) Journal



DuVal,  
E. H.  
2003

catalog

27 April 2003

Isla Boca Brava - WEL4 display area, about 1 km  
from the Eastern tip of the island; Gulf of Chiriquí;  
Chiriquí Province, Republic of Panamá

EHD 021

Individual #178, YAR - definitive adult male plumage  
16.0 g, adult skull, left testis 7.0 mm x 5.0 mm  
right testis 5.8 mm x 4.5 mm. <sup>both whitish</sup> Stomach mostly empty,  
with some purplish-green fruit pulp. Alpha male  
on the "WEL4" display territory. Collected as  
part of alpha male removal experiment. Captured  
in a grove of cecropia trees near the display area.  
Preserved tissue samples, syrinx, testes, and some  
skeletal material.

1 May 2003

0.5 km West of Eastern tip of Isla Boca Brava, Gulf of Chiriquí,  
Chiriquí Province, Republic of Panamá; CCL5 display area

EHD 022

Individual #067 BYY - definitive adult male plumage  
15.0 g, adult skull, fat 0, no molt, cloacal protuberance = 1  
Right testis: 3.7 mm x 4.0 mm - grey  
Left testis: 6.7 mm x 4.0 mm - white  
3 seeds of Davilla kunthii in stomach.

First banded in 1999 (in DM plumage, = 7+ years old); Alpha male  
at CCL5 display area in 2003.

Collected tissue (muscle, heart, liver, kidney) as well as  
syrinx, rt. testis, and gastrointestinal tract with contents. +skeleton



DuVal,  
E. H.  
2003

## Journal

Isla Boca Brava, Chiriquí, Panamá

10 April 2003

Finally, after several days of netting, I captured BSY (DM), the alpha male at SNK display area. I relocated him to Isla Palenque, which is as far as I could convince the boat driver to take me for \$10. He flew away strongly.



DoVal,  
E. H.  
2003

## Journal

Isla Boca Brava, Chiriquí, Panamá

11 April 2003

I watched the SNK display area for 2 hours in the morning and one in the afternoon to observe the aftermath of removing the alpha, BSY. The area was very, very silent and I saw few manakins. Shortly into my first watch, <sup>(@ 10:50am)</sup> though, I noticed a coral snake in a tree about 20 meters away. It was lying completely still and draped over the trunk of a leaning tree. I investigated more closely and found that its head was severed and completely gone. The blood was still fresh on the wound, and two marks (like puncture wounds, but visible only because of the puckering of the skin, not because of any hole or blood) were on the side about 6" apart. The entire snake was about 1½ feet long and 1½ cm in diameter. ( $\pm$  the diameter of my index finger). As I investigated the snake, a Laughing Falcon "laughed" very nearby - about 20m to the South. It vocalized a little more and then flew off to the North. I videoed the snake, both to get a better ID of the species and to see if Tabitha Bruce of Cornell University can use it in her research on coral snake depredation by Laughing Falcons. I finished my watch and returned to the snake ~ 1½ hours ~~later~~ after I initially looked it over. The blood was congealed and drying at the



DuVal,  
E.H.  
2003

## Journal

Isla Boca Brava, Chiriquí, Panamá

11 April

head. I focused the video camera on the tree and snake and left it recording as I went to lunch at 12:30 pm. At 1:08 pm, the ~~S~~ Laughing Falcon was recorded returning to the coral snake, grasping it with both feet, and flying off to the southwest.

The rest of the day was largely comprised of nest work. I staked E-21 and observed ARV(G) feeding the one ready-to-fledge chick. I bled and banded the new chicks that Julie found yesterday - I'm assuming that's J-15?

♀ PRW(G) mobbed me as I did so, confirming the bands Julie saw yesterday. The E-nest by BTR3 dance perch has hatched and has two 3-d. old chicks (no pin, dry fuzz on head + back, about 1" long), but when I staked it the female sat on the nest with her back to me and left when I tried to change position. My nest at SBE2 hatched and has one chick ~2d. old. The air bubble in the remaining egg moves freely & the egg is dark - probably not going to hatch. OPA(G) mobbed me, fluttering ~6" off the ground and "falling" in a flailing distraction flight from higher perches as I bled her chick. Only chicks' mothers ever go to quite such lengths in mobbing, & as I had suspected OPA anyway I feel confident in saying she's the mother.



DuVal,  
E. H.  
2003

## Journal

Isla Boca Brava, Chiriquí, Panamá

11 April

At 1615 I saw a large (~4' long) black snake at SNK dp1 during my afternoon watch. He was greenish-black with a small head and a light whitish underbelly from his throat/chin all along his body.

12 April 2003

We got a slow start this morning because two departing tourists - Haime from Portugal and Marco from Quebec - were trying to converse and be friendly. That just doesn't go over well before 7:00 am...



DuVal,  
E. H.  
2003

## Journal

Isla Boca Brava, Chiriquí, Panamá

15 April 2003

I continued to net at TCJ 2 today to remove RGR (DM), the alpha. Julie helped me set one new net in the morning (as he seemed to know where the other three are) and then she set off to SNK to continue observing at our other removal site. I netted until 11:30 catching only one manakin but 4 Swainson's Thrushes. Two of those SWTH's had fat scores of less than two - the others were more appropriately prepared for migration, with fat overflowing their foreular pits. While netting I took GPS coordinates on my most recent nests and dissected a manakin nest into its component layers, as M. Foster suggested could be done. Fern ("vine fern") leaves held together with spiderweb comprised the outer layer 2-5mm wide fiber strips <sup>+ bungal rhizomorphs</sup> were the middle layer, + the lining was of very fine twigs, leaf midribs, and rhizomorphs.

After lunch I staked nests and bled chicks at the four BTR nests that presently have chicks. I got the



DuVal,

E. H.

2003

# Journal

Isla Boca Brava, Chiriquí, Panamá

15 April

female for one-she mobbed me using the "injured female" strategy where she flutters/falls diagonally away from the nest, often fluttering through low bushes for some time when she gets ~1 foot off the ground. She pauses for 5-60 sec., then flies back rapidly to the same or a different high perch to see if I'm still near the nest. All of this is accompanied by much wing-flicking.

Nest E-13 (♀=BOB) has one chick several days old and one egg. I noticed that the egg had two small holes in the more rounded end and I couldn't hear the typical tap-tap-tap of a hatching manakin within. So I carefully broke open the shell to see if the contents were developed. There was a fully-formed chick inside, dead and starting to decompose. Where did the holes come from? Could the mother have reduced her own brood by pecking it herself?

At 18:00 I caught RGR (DM), and I took a good-sized hormone sample from him immediately.



DuVal,  
E.H.  
2003

## Journal

Isla Boca Brava, Chiriquí, Panamá

15 April

Reuben "Pollo" Villalobo took me, Julie, and RGR over somewhat rough seas to Isla San Jose, where I released RGR. He flew away strongly and struggled throughout. I still have misgivings about not killing <sup>+ collecting</sup> the removed alphas. But, for RGR, I hope that San Jose will be sufficient exile.



Dolal,  
E.H.  
2003

# Journal

Isla Boca Brava, Chiriquí Prov., Panamá  
18 April 2003

Today was almost completely overcast and still, even sprinkling rain for a few moments. Lance-tailed manakins all over the study site were singing their hearts out.



DuVal,  
E.H.  
2003

## Journal

Isla Boca Brava, Chiriquí Prov., Panamá

22 April 2003

I prepared for the next - last? - two alpha removals today. I made a list of the nine eligible display areas and used the random subsampling function of JMP to choose my targets: WEL4 and ADS. A closer review of the WEL4 data sheets showed that we aren't yet positive whether the alpha is YAR or WPA. I did a slow 1-hour watch there with no progress on that.

In the afternoon, stormclouds started gathering and there was a light shower, after which the manakins were active all over the study site. I did a 1-hour watch at ADS and afterward saw those males dance for a female twice.

I put up one net <sup>now closed, of course</sup> for tomorrow. I also saw dancing for a female at FBE1/2, and Julie saw dancing for a female at BTR in the afternoon.

Last night was our first solid rainstorm in a very long while. I estimate  $\pm 3\frac{1}{2}$  inch of rain fell in a short amount of time ( $< 2$  hrs). The whole day today was humid + overcast + still.



D. Val,  
E. H.  
2003

## Journal

Isla Boca Brava, Chiriquí Prov., Panamá

30 April 2003

We went to David for the last time today and while there I sent a fax to ANAM (Kruskaya de Mel \_\_\_\_\_ and <sup>Ibelice</sup> ~~Familia~~ \_\_\_\_\_) requesting export permits. I requested permission for 150 blood samples, two male specimens, one female specimen, and four nests. I left the restaurant phone number as a contact # in case there are problems, though I have little hope of receiving the message if it comes. I submitted an abstract for the July ABS meeting in Boise, ID and sent an email to Biff (Eldredge) Birmingham asking for someone to contact about identifying plant specimens in the STRI herbarium when we pass through Panamá City on May 14.

When we got back to the restaurant, there was an insect invasion in progress. Clouds of flying ants were circling the lights in the restaurant and they were in everyone's food, hair, clothes, drinks... A heap had formed beneath the bug zapper and a tub of water left under a light was fully layered with ants. This is in response to yesterday's big rain, I guess - the rainy season has arrived!



DuVal,  
E. H.  
2003

## Journal

Isla Boca Brava, Chiriquí Prov., Panamá

1 May 2003

Today started sunny and quickly became overcast, raining lightly (but not enough to send us home) at 9:00 am. ( $< 1/16''$ ). The weather gradually cleared after about 9:30 until the day was bright and sunny again by noon. I was sitting at CCL5 for the final alpha-male removal while Julie did watches at many sites. I finally gave up the  $\gamma$ -male hunt at ADS, taking down the 2 remaining  $\delta$ -m that were there. As I set one of these near the latest CCL5 dance perch, B44 (DM) - current alpha - finally flew into the net across the gully. I took hormone samples immediately (7 min after the net, 30 sec. to remove) and half an hour later, but his veins were damaged from the first bloodletting and the 30 min sample is very small. I attempted & failed to take blood from the jugular vein, and then killed him by thoracic compression. I prepped him as a museum skin in the evening.

Two nests have hatched in the TCJ5 area since we went to David yesterday, and we staked those to get female ID's without much luck (Julie saw --Y around the nest)

The <sup>Yellow-Green</sup> vireos by cabaña 1 fledged today and have been noisily crying for food ever since. There's a large chick in the YGV1 nest by LHL. The bug swarm continued at night.



DuVal  
EH  
2003

## Journal

Isla Boca Brava, Chiriquí Prov., Panamá

4 May 2003

An inch of rain fell starting at 4:00pm, giving us a good reason to head back to the rancho and organize nest sheets before dinner. We're both soundly exhausted.

BWG (DM), the  $\beta$  at CCL5, finally showed up at a 2-hour watch there today. There have been basically no birds present since the  $\alpha$ , BYY (DM), was removed and collected on May 1. I was beginning to think that no one would take over that site at all. So why are some sites immediately filled (WEL4, SNK) and some linger basically unclaimed (CCL5, TRJ2)? BYY was an old alpha ( $\alpha$  of CCL4 ~~for~~ CCL5 since 2000), and BWG was frequently absent before he was removed as well.

At lunch, a Panama Flycatcher was seen chasing and attacking a male and female Red-legged Honeycreeper. The flycatcher actually bit one of the honeycreepers in mid-air. This happened near the rocks on first beach. Maybe the flycatcher has a nest?



D. Val,  
E. H.

2003

## Journal

Isla Boca Brava, Chiriquí Prov., Panamá

9 May 2003

We started the day at the Western side of the field site, having spent last night at Christina's house (near the LOT display area) to care for her pets while she's in Panama City. The LOTs birds started duet singing at about 06:15 - a bit later than the EDM birds are starting these days, but it was a dark morning and LOTs is a dark site even on bright days.

In my first watch of the day, I saw WPA and ~~WVR~~ WRV dance for a female (unbanded) at WEL4b. WPA did a solo display for the female, confirming that he has indeed taken over the alpha role in the wake of YAR's removal.



DuVal  
E.H.  
2003

# Journal

Isla Boca Brava, Chiriquí Prov., Panamá

10 May 2003

Today was cut by a rainstorm that started at 4:30pm and, at 5:15, seems determined to drizzle into the evening. I had had nets open for  $\pm$  40 min at SPV, targeting the sole remaining territorial unBDM. He was around the nets and even seems catchable. I caught BWG, former beta at the CCL5 removal site, and now have a good ~~blood~~ hormone sample from him (9 days post-removal). Unfortunately I didn't get a sample the day I caught  $\sigma$  BYV. Note that BWG is a second-year DM, and that WBR also took a young  $\beta$  <sup>(known-age)</sup> upon losing his previous  $\beta$  to CRZ. Known-age birds are ascending to positions of power...

The most important note from today is that during a one-hour watch at FBE 2/1, WAY and RYV (the usual  $\beta$  &  $\alpha$ , respectively) did a PF-2 for a female in the area (seen only as a green blur) which separated into two separate PF-1's. RYV retreated to FBE 2 dance perch, ranging as far as the path that runs in front of FBE 1. He stayed high, pipping at the average PF-1 rate (1 pip every 4-6 sec.) and definitely seeming to



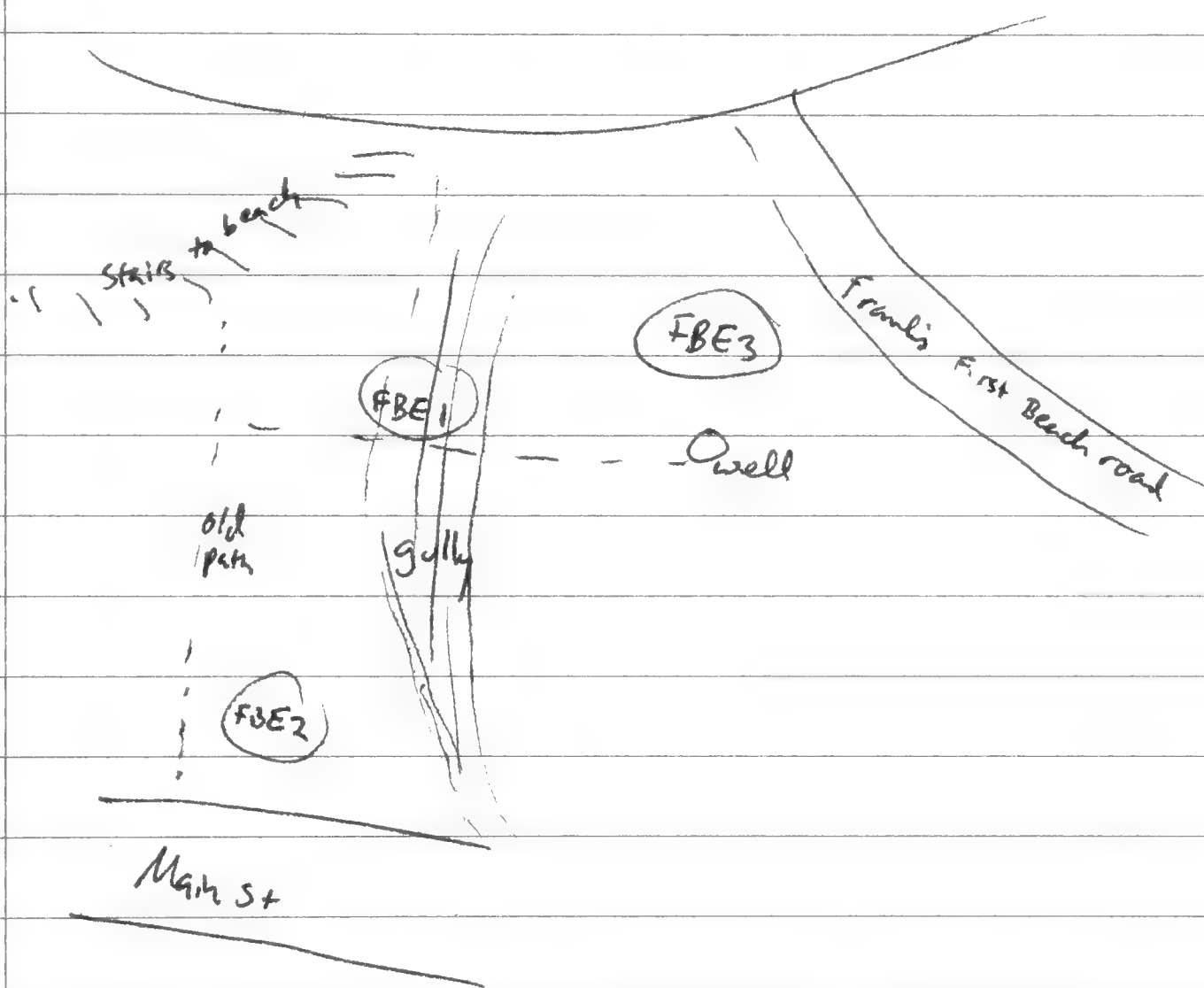
DuVal,  
E. H.

# Journal

2003

Isla Boca Brava, Chiriquí Prov., Panamá  
10 May 2003 cont. p. 2

be courting a female. In the mean time,  
~~the~~ I could hear a similarly-paced series of  
pips from the FBE3 area. After about 10-15 min,  
I noticed a DM doing a low SF-1 around



dance perch FBE1. I saw no ♀ on the  
dance perch, but by the ♂'s behavior I  
am very sure that one was present. Again,  
a green blur was seen flying from the area.  
The DM doing SF-1 was WAY (DM). WAY  
has assisted in 2-♂ dances that progressed  
to 1-♂ displays, and he has consistently  
been beta - always RYV stayed with the



DuVal,

E.H.

2003

## Journal

Isla Boca Brava, Chiriquí Prov., Panamá  
10 May 2003 p.3

female for solo display. But once at the beginning of this field season I observed WAY displaying solo (SF-1) for a female who was on dance perch FBE1 while RYV sat just a few feet from the dance perch, watching. This is unusual because <sup>①</sup> WAY had previously (and did again later) play the beta role for RYV at FBE2; <sup>②</sup> Betas do not sit so close and observe solo dance displays - they usually move some distance away <sup>③</sup> There was no two-♂ dance for this particular female.

So what's going on here? Is this a type of concession by RYV? Are the paired displays a sort of rent-paying by WAY? Does RYV never dance with WAY on FBE1 (as a beta (ie RYV leaves & WAY stays)? Is this a form of reciprocity? Certainly this was RYV's territory long before WAY joined him. Is this the only pair of males that splits dance perches up between them within one territory, yet maintains a partnership? There's potential for this situation at WEL4, SBE1, & ADS-HEC. This arrangement would make sense if cooperative display evolved from ancestors who only displayed cooperatively at territory



DuVal,  
E. H.  
2003

## Journal

Isla Boca Brava, Chiriquí Prov., Panamá  
10 May 2003 p. 4

boundaries, like some Pipra.

Hypothesis: Alpha-beta pair QR together to advertise the area, defend it, & attract ♀♀.

Display together as necessary at the main dance perch, and the ♀ only has access to females. ♂ may or may not be allowed to do solo displays for ♀♀ elsewhere in the territory.

Skevo theory would predict that not all pairs of males would share mating opportunities equally. What is different about pairs that share vs. those that don't? Would expect sharing pairs to be less related than non-sharing pairs. "Pair type" isn't a predictor of sharing (is it?) - RYV and WAY ~~are~~ would be considered closely-bonded and are always seen singing together, and regularly dance for females.

How can I get more data on this?  
I need an army of people or video cameras watching multiple perches in a given display area simultaneously. Not all display areas seem to have multiple perches. What makes the difference?



DuVal,  
E. H.  
2003

## Journal

Isla Boca Brava, Chiriquí Prov., Panamá  
10 May 2003 p. 5

Another interesting note from today is that Julie found a female sitting on her failed nest by the first beach road. The nest had two eggs some time ago, but the eggs disappeared and we expected nothing else to happen. It's not yet known whether the female has laid an egg, and we have no way of knowing whether it was the same female active at that nest both times. This is the first time we have observed a female apparently re-using a nest, though in 2001 one of ~~Eric's~~ Eric's SBE1 nests had a female who kept "incubating" with no eggs in the nest - for two weeks.



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E. H.  
2003

## Journal

Isla Boca Brava, Chiriquí Prov., Panamá

5 May 2003

The day started slightly overcast and the manakins were quite active. During a watch at TCJ5 (which abuts TCJ2, a removal site), I recorded males YGR and YPB (DMs) spending a fair amount of time at TCJ2, with some duet singing and even a dance in the presence of female - R- (G). The female was not on the dance perch, but was clearly interested and sat on a branch about a foot above the perch, watching. This dance was on the standard TCJ2 perch which we monitored earlier with the video camera. During this time, AWA (DM), former  $\beta$  at TCJ2, was duetting with the alpha BAA (DM) at SBE2, where Julie was doing a watch. AWA seems to be giving up any claim on the  $\alpha$  position at TCJ2 in order to be  $\beta$  at SBE2. Maybe he just didn't have or couldn't find a beta for TCJ2?

BWG was seen again at CCL5 (the last  $\alpha$  removal site) and seems to be slowly taking over that area.

I found a nest with eggs right by the rocks in the middle of the first beach, and when I flushed the female (with difficulty) it turned out to be SOB, a chick from 2001 <sup>I believe</sup> from a nest out in the MAN area. If the eggs don't hatch by 5/13, I'll collect one.



DuVal,  
E. H.  
2003

# Journal

San Jose, y Bolaños

Islas Boca Brava, Chiriquí Prov., Panamá

7 May 2003

Clear and sunny morning: the manakins were relatively quiet as we walked out to Christina's house to get house-sitting instructions at 07:00.

Today was our first and last true day off this field season. I did a half-hour watch at WEL4 just to not let everything slide, and then declared today "employee appreciation day": we went with a group of tourists to snorkel at Isla Bolaños. On the way there, Elvy drove us past ~~the~~ small nearby island that is an ibis (White Ibis) and Great Egret <sup>shallow</sup> rookery. A black vulture roosts or nests in a small cave on the East side of the island, and juvenile ibis were everywhere. Several Magnificent Frigatebirds also rested on nearby rocks or hovered over the colony. There were certainly more than 300 White Ibis present, and perhaps as many as 500. On Bolaños I didn't bird much but did see Bananaguits in the high coconut palms and a Tanager in the understory. I heard no Lance-tailed Manakins, confirming my experience in previous years - I don't believe there is a population on Bolaños.

On the way home, we stopped for an hour at Isla San José where two of the



DoVal,  
E. H.  
2003

## Journal

+ Isla San Jose  
Isla Boca Brava<sup>1</sup>, Chiriquí Prov., Panamá  
7 May, cont.

removed alphas had been released. Julie and I hiked up from the Southern Sandy beach until we heard Lance-Tailed Manakin vocalizations to the West. We followed them and found two unbanded, definitive-plumage males who responded readily to my mimicked down-whistle and who came quite close. The habitat on San Jose is at a much more developed successional stage than that on Boca Brava. The canopy is high and dense - it's  $\pm 15$  m in most areas of Boca Brava, but was more like 20-25 m on San Jose. The understory was very open and easy to walk through with no grasses and few if any shrubs. Small trees of about 3 m in height were abundant and there were plenty of potential nest sites, though these small trees were generally "cleaner" and straighter than Boca Brava saplings. I saw no Euphorbia sp. saplings or trees, but I didn't look too hard. We returned along the coast and noted the volcanic appearance of the rocks - they are very fluid in morphology, and streaked with veins of a bright green stone that is something like serpentinite or jade. See following page for a map of San Jose.



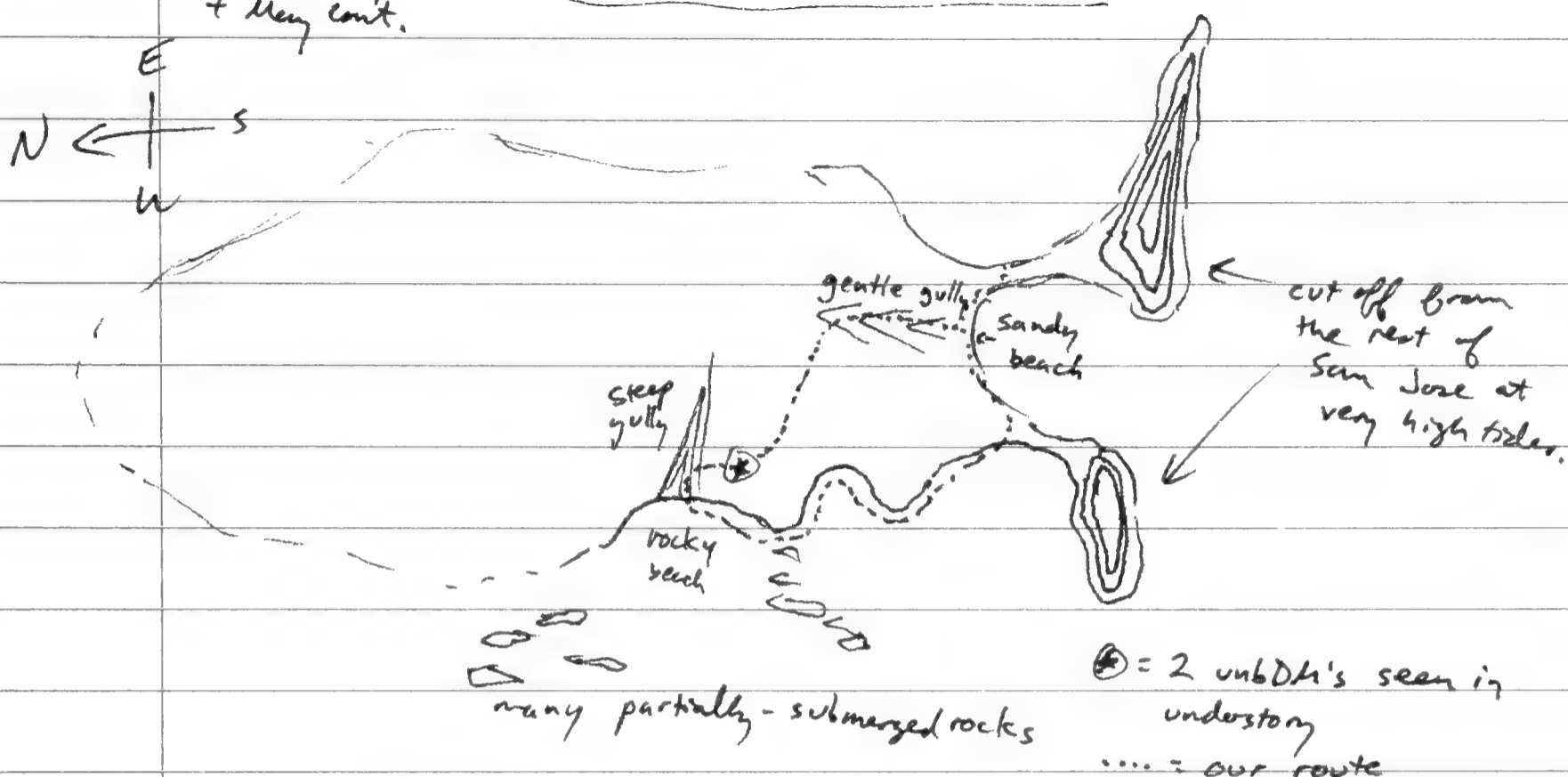
DuVal,

E.H.

2003

# Journal

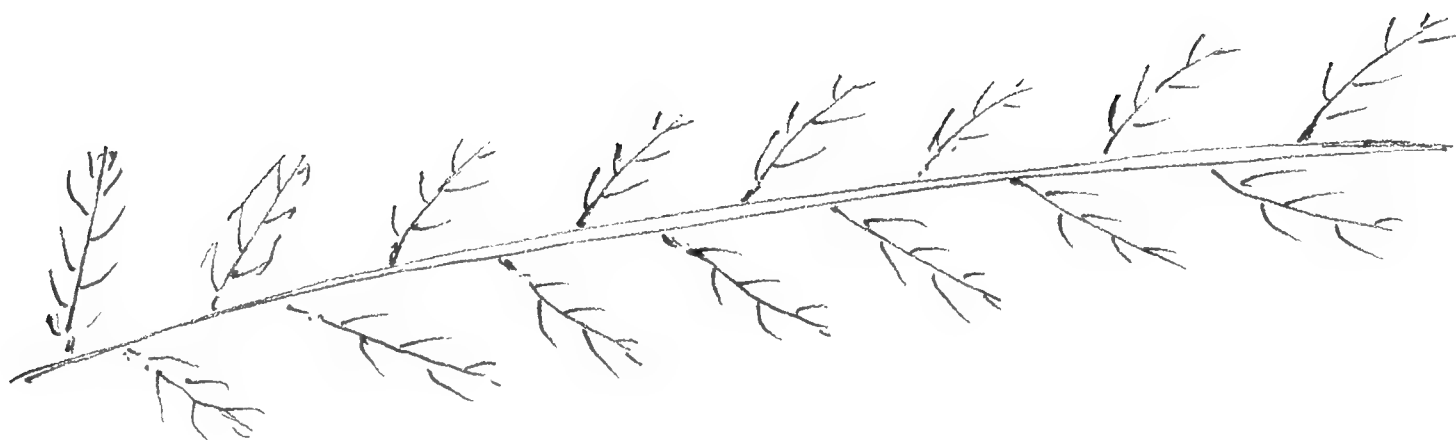
Isla San Jose, Chiriquí Prov., Panamá  
7 May cont.



I noted a Panama Flycatcher in the understory, but saw no nests, manakin or otherwise, on our brief time there.

It seemed like it might rain <sup>at ~ 5:00pm.</sup>, but did not. We did paperwork in the evening and Julie gave me a plant sample from nest 1 to sketch - it's not one of the typical 3 species, but looks very similar to the plant we've nicknamed "species 3" for years (because I keep forgetting to look up the scientific name in Berkeley). Leaves are alternate with short petioles, rippling along the edge, and have a smooth, darkish green surface. The new plant also has ridges along the leaf edges (very fine) where "species 3" plants have a smooth edge. Where "species 3" leaves smell like fresh-cut grass when crushed, this new species had a tangy smell that was somewhat stronger.

See back of this sheet for sketch.



E. H. DuVal

Field Notes

2004

General Index

1) Catalog - N/A

2) Journal 21 Mar - 12 Apr



DeVal,  
E.H.  
2004

# Journal

Berkeley, CA, Alameda Co., # California

21 March 2004

Pre-field season planning:

at the end

in 2003, the  $\alpha$ - $\beta$  pair was directly confirmed at:

OCV	YPY - GWW
SNK/LHL	WGW - GAW
SLN2	YYA - AOR
TCJ5	YGR - YPB
WEL4	WPA - WRV

not noted in the master database but also known were:

EDM	GAG - YVA	w/associates active
CCL1	WBR - RYY	
SBE2	BAA - AWA	
(SBE1)	(AWP - AWW)	
(WEL3)	(RAW - RGG)	
FBE2	RYU - WAY	
ACA	AAR only	
BTR	YVR - BYV	(GVA)
GUL2	GVA - ?	*check b/c of recent takeover!

14 sites we'd like to get  $\alpha/\beta$  for in 3 weeks

Removal sites: SNK1  
WEL4  
TCJ2  
CCL5

} 2-hour watches

goals for this field season:

identify  $\alpha$  &  $\beta$  at as many display areas as possible  
5-10 2-hr watches @ removal sites (+  $\frac{1}{2}$  hr watches?)

10  $\frac{1}{2}$ -hr watches on different days for key other areas  
net any unbanded  $\delta\delta$ ; telomeres + spectrophotometer???



DuVal,  
E. H.  
2004

## Journal

### Panama City, Panama

22 March 2004

I left this morning for Panamá. I finished my Allee competition submission for the Animal Behavior Society conference at 1AM & put it in the mail, for better or for worse. And I decided not to take the spectrophotometer or the telomere-sampling buffers. I may regret it once I'm there, but it's just too much to think about.

#### Expenses so far:

Shuttle to GAK airport: \$24

Hotel - 1 night Marparaiso: \$22

Taxis in Panama City: \$3

Groceries: \$21.46

Dinner at El Trapiche: \$5.50

23 Mar 2004

I repacked, then went to El Machetazo this morning to buy film, pens, a journal, and, most importantly, photos for my research permits. Then I took a taxi to ANAM (Edificio 804, Albrook) where I got my permits with little delay & no problems. As I was waiting, I met Brian Vergara ((507) 264-1286 ~~the~~ phone) who works on fish (marlin?) in the Darien, as a field assistant. He's Puerto Rican, has lived in LA for 14 years, & has a house in Panamá. He gave me a ride back to the Marparaiso and I packed my bags off to the Albrook bus terminal. I caught the 11:15 bus to Horconito (David line),



DeVal,  
E.H.  
2004

## Journal

Isla Boca Brava, Chiriquí Prov., Panamá

23 Mar cont.

which only broke down for an hour en route. And then I waited for a taxi at the Horconcito/Interamericano crossroads for an hour before Toto (green taxi) came by & couldn't fit the research trunk into the car, so promised to send Gambute. I should have stopped him then, knowing that I hate Gambute, but I didn't & Gambute came & extorted \$15 from me for the ride, <sup>still</sup> charging others the 50¢ to Horconcito. Turns out he charged Julian \$20. It took a while to find a boat to the island as well, but I sat talking with Romero's son and two friends, as well as Leo and Don. By the time I made it to the island (William took me) it was around 8:00 pm. Yadira had saved spaghetti for me, and Julian was waiting with Boxer on the dock. Home sweet home.

The North wind has been blowing, apparently all week. Things are dry & dusty between here & Horconcito.

24 March 2004

The wind blew all day long, keeping the manakins in check. Julie has found one nest with eggs, which will hatch before we leave. It would have been better timing, both with nests and wind, to come several weeks later. But this is when we had Spring Break, so... Frank says everything is



DuVal,  
E. H.  
2004

## Journal

Isla Boca Brava, Chiriquí, Panamá

24 Mar cont.

late this year: the avacados are ripening slowly, and all the fruit is late. The wind has just started this week, which means it might keep going for a while.



DuVal,  
E. H.  
2004

## Journal

Isla Boca Brava, Chiriquí Prov., Panamá

25 Mar 04 - Weather was hot and dry, again, with the North wind blowing ~~and~~ until mid-afternoon and then suddenly stopping. The manakin action picked up dramatically during this reprieve.

I did watches at FBE2, GUL2, TCS5, BR12, CCL1, + SBE2. WAY seems to be gone from FBE2 entirely - YVB(DM) is acting like the local beta, with RYV still present (♀?). Before the watch, I saw 4 redcaps (3 banded, 1 ♂) dancing on FBE3 dp, with an <sup>unb</sup> CB occasionally joining in. The RC's were doing ~~T~~, & excitedly doing the back-and-forth move when another RC flew over. One practiced the sweep & bounce moves as well, with no one particularly paying attention to him. ⇒ Not aggressive displays because often not directed AT another bird. I do think that these behaviors are best described as practice or play. I set the video camera here in the afternoon to see if I could record any RC-RC dancing. The watch at GUL2 was ill-advised due to high winds, & I stopped after 1/2 hour. TCS5 was similarly quiet, though less windy. Several individuals were seen feeding on Miconia fruit. At BR12 I eventually saw BW, but



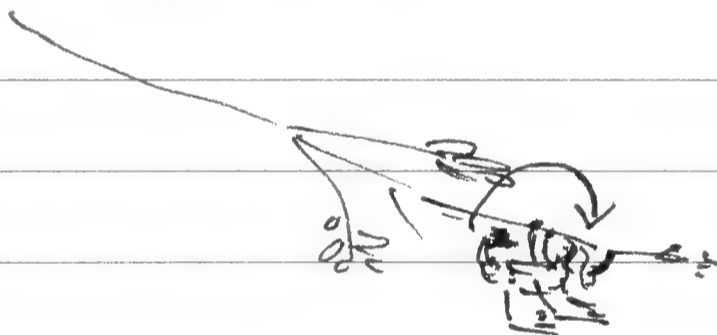
DuVal,  
E. H.  
2004

## Journal

Isla Boca Brava, Chiriquí Prov., Panamá

25 Mar cont.

things were again slow. I saw RC's WCH and CYR - are the 2002 chicks maturing at several different rates or am I confusing the years? CYS'(CB) was seen today (ad hoc) & was extremely dark: practically DM. At BRI I also saw a <sup>olive</sup> flycatcher building its pendulous nest by taking fiber in its beak, then rotating it's body around the ~~pole~~ supporting twig like a pet parrot.



I also saw a calling Streaked Flycatcher, Swainson's Thrush, and fighting Yellow-green Vireos.

The dp at SBE2 has been crushed by a falling tree. BAA is nowhere to be seen, & the replacement seems to be AWA. Important: spot - map ♂ locations to identify display areas; area. AWA is moving far & frequently.



DoVal,  
E.H.  
2004

## Journal

Isla Boca Brava, Chiriquí Prov., Panamá

26 March 2004

I did watches at the removal sites from 2004 today, and we're getting a handle on the long-term replacement results:

✓-? SNK1 - GAL seems to be  $\alpha$ , w/ WRR  $\beta$ . This is confusing on several levels: we had named WRR  $\beta$  previously, so this would be the first case of a  $\beta$  having his  $\alpha$  replaced & staying  $\beta$ . Also, GAL was formerly  $\beta$  to WGW at LHL, and WGW is still around (and coming to SNK sometimes)

- TCJ2 - YGR still is  $\alpha$  here; I haven't seen YPB with him yet this year. NOY (DM) was there today

(?) CCL5 - very little action

✓ WEL4 - WPA & WRV still present & apparently  $\alpha/\beta$ .

- ACA4 - 2003 - 2004 - AAR still there

BR12 - ~~was~~ N/A

SBE1 - N/A

- SBE2 - not same  $\alpha$  in 2003

So far 6 long term results, in 3 cases the inheriting  $\alpha$  did not hold his territory; in 1 he did; and SNK + CCL5 are a mixed bag.

The SBE1 guys are singing up the hill near WEL3 (but on the other side of the road), & displayed for a  $\beta$  in that area.

Today I saw a Lineated Woodpecker near ADS (NW end of study area) and a male and female Thick-billed Euphonia in the same area.



DoVal,  
E.H.  
2004

## Journal

Isla Boca Brava, Chiriquí Prov., Panamá

27 March 2004

Things were fairly active this morning but died down midday. There was very little going on at TLD5 - I'm not sure whether the site is dead or whether I've just been watching it at slow times. I saw RVV (I think) at both SBE2 + EDM1. Julie saw a jaguondi run through the CCL1 display area, and I saw a howler monkey copulation at OCV1. I found three nests with eggs, though only one had two eggs. This field season is so short that anything <sup>nest</sup> that wasn't fully laid by yesterday won't hatch before we leave.

Julian's recordings are going well - he finished a playback trial to test for song degradation in the forest yesterday. Today he was trying to get pairs of males recorded at as many sites as possible.

I paid the week's bill today, which totalled \$109.40

First rain of the wet season this evening, from ~ 8pm - 10pm. It rained about an inch? (or 1/2"?). Frank says it was the first rain since December. The rancho leaks like a sieve



DuVal,  
E. H.  
2004

## Journal

Isla Boca Brava, Chiriquí Prov., Panamá

28 March 2004

The birds were active today, though not so much as I would have expected after a rain. I saw GAW (DM) & Riq at LHL, confirming that he travels between there & SUK. I still haven't seen WGW, though both Julie & Julian claim to have seen him in the area. Yesterday I found SOB (G)'s nest near FBEI with one egg, and today I confirmed her ID (a chick from <sup>2001</sup>~~2002~~, & we got her nest last year, too) and noted her second egg. I also took several digital pictures of her on the nest. As before, she mobs aggressively when flushed, making it easy to get band combos from her. It was Julian's last day on the field site.

29 March

2004 - We accompanied Julian as far as <sup>(in the highway)</sup> Boquete, where we enjoyed breakfast at the "Punto ~~Lugar~~ de Encuentros" (or a similar name) which had bananas set out on a stone wall to attract birds. As we ate, we saw:

Clay-colored robin

Rose-breasted Grosbeak

Palm tanager

Thick-billed Euphonia

Blue-grey tanager



DuVal,  
E.H.  
2004

# Journal

Temp:  
24-35°C  
76-95°F

Isla Boca Brava, Chiriquí Prov., Panamá

29 Mar. cont., Julie & I continued on to David where we did some grocery shopping, checked email, and changed \$60 in traveller's checks. It rained very hard in Horconcito as we waited for a lift at 4-5pm, but we caught a ride with some forestry workers just as things let up. Someone has bought & razed a cow farm near Boca Chica, and is planting teak trees with a small army of young men housed barracks-style just on the edge of town.

30 March 2004

I was stung by seven bees while nest-searching today, and spent a few hours feeling sorry for myself. ~~but was~~ A fabulous watch at CCI at the end of the day changed my attitude, though - WBR<sup>(au)</sup> copulated with BAG (G) and nearly <sup>(but not)</sup> with OPA (G). We know where both of those females usually nest, so we can hopefully collect an egg from each to verify things genetically (and see who OPA does choose in the end. I checked the Max/Min thermometer for the first time in ~4 days, and the range has been 24-35°C (76-95°F). No rain on Boca Brava since March 27. House wrens (2) near the rancho in the evening, & Julie saw a big boa at SNK.



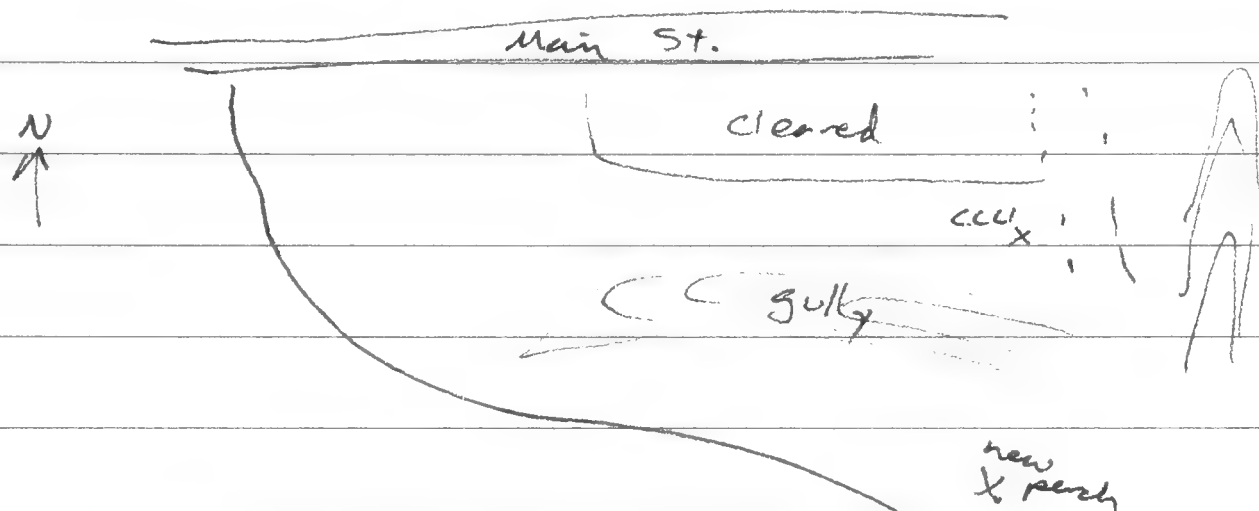
DuVal,  
EH.  
2004

# Journal

Isla Boca Brava, Chiriquí Prov., Panamá

31 March 2004

There is definitely a new dp being established near CCL1 + LHL:



AOP<sup>(DN)</sup> has been seen there

Several times with various birds.

The day started cool + still + cloudless. Max + Min temperature for the last 3 days has been 26 - 34°C (78 - 93°F).

Julie saw a medium-sized mammal at EDM that may have been a Grison (field guide ID pending). Nest J-1 at WEL4 has hatched.

I found an unb G building a nest at CCL5 that is at least 8' off the ground, and not at all on a slope - the highest flat-site nest we've found yet! Nest V-A near SNK also has one egg as of yesterday. I went searching for BAT's nest (after seeing her copulate yesterday) and found a complete but empty one right where she usually builds. How long does it take for <sup>OO</sup>fr to lay? This was ~24 hours after copulation. I saw a pair of Roadside Hawks

*Galictis vittata*  
from her description in  
the data sheet, definitely  
a Greater Grison



DuVal,  
E.H.  
2004

# Journal

Isla Boca Brava, Chiriquí Prov., Panamá

copulate in a tree near Lee's lot. 'tis  
the season...

1 April 2004

The morning was overcast and the birds were active everywhere. I saw two Black-chested Jays being mobbed by Yellow-green Vireos along Main Street as I walked out in the morning. I flushed the (green) female from nest J-1 and saw that she was banded --V with an A in there somewhere. Going to my Bridge watch, I flushed a Little Tiramou from near the sit-spot at the top of the hill by BR12. My OCV nest has hatched (2 chicks, 1-2 days old), and on my way to a watch at ~~Bridge~~<sup>BTR3</sup> I flushed two Black Vulture chicks from the gully west of ACA4. One ran as I approached, crashing through the underbrush like a mammal and well disguised by thick beige down. The other stood very still, half-under a Piper sapling in the bottom of the gully. I circled carefully around him until I was between him & his brother's escape path, and took several pictures. After a minute, he retreated rapidly up the gully to a



DuVal,  
E.H.  
2004

## Journal

Isla Boca Brava, Chiriquí Prov., Panamá  
1 April 2004 continued

hole that looked much too small for two nearly-grown vultures. I located the sibling hiding among some vines by SPY dance perch, and I left him alone to work his way home. While I was at BTR I heard a vulture fly into the SPY area - maybe Mom coming back? This was the first time I've seen a vulture nest.

The BTR watch continued the excitement, with two copulations by YVR (DM), both with unbG ♀'s (the same one?). In at least one copulation, BWG (DM) acted as beta - wasn't he the former  $\beta$  at CCL5 ??? It definitely warrants a little more observation. GVA (DM) showed up to QR when the watch was over, and he was also present at my next watch (GUL2). GUL was considerably quieter, and GVA was not present for most of it. I had spent so long writing about the displays for females at BTR that I didn't have time to do a watch at EDM.

Julie and I took turns entering data & working with the database - me from 11-12:30 & Julie for 2 hours in the afternoon. There's still much to do, but it's not hopeless.



DuVal,  
E.H.  
2004

## Journal

Isla Boca Brava, Chiriquí Prov., Panamá

2 April 2004

I started the day by ~~the~~ bleeding the chicks in nest E-3 in a gully East of OCV. As I finished bleeding the second chick, BOV (SLR) mobbed me aggressively. During a watch at EDM I noticed a flock of down-whistling females mobbing a Mangrove Cuckoo near nest E-6. I've seen many mangrove cuckoos lately, and they forage low in the vegetation - they could be significant nest predators. I watched an unbanded green-plumage female constructing a nest in the early stages at EDM - she was breaking off chunks of leaf and then dropping them, about 15 feet from her nest site. She eventually settled on a chunk slightly smaller than her head. She flew to her nest fork (which I hadn't noticed before) and "tested" it, squatting in the fork with both feet clutching one of the branches. She then dropped the leaf chunk in the fork where it hung in spider webs which she had already arranged. She "tested" the site again, and the leaf piece fell to the ground.



DuVal,  
E.H.  
2004

## Journal

Isla Boca Brava, Chiriquí Prov., Panamá

During an afternoon watch at WEL 4, I saw female XXK - apparently, a female that fledged before she could be completely banded. I also saw a <sup>Scarlet</sup> ~~Crimson-backed~~ Tanager near WEL 4 and another near WEL 3.

A pair of males seem to have set up a new dance perch near the cruce, across the street from CRZ. I hunted them down twice (at 3:00 pm + 5:00 pm) and both times they were SGY (DM) and YPB (DM). SGY was noticeably lighter, with a greenish rump. The more I see known-age DMs the more sure I am that there's a "first-year DM" plumage that's more greenish than older DM males.

Julie saw a copulation at CCL1 by WBR (DM), who did not display with a partner. She recorded an amusing inter-species interaction which I'm having her write on the following page:



DuVal,  
E. H.  
2004

## Journal

Isla Boca Brava, Chiriquí Prov., Panamá

2 April 2004

During my watch this afternoon at CCL I saw WBR DM copulate with an Unb g, with no help from his partner. Everything was quite normal throughout the display except an unexpected visit from a Swainson's thrush to the dance perch. WBR was trying to convince the unb g to stay on the DP since she had left two times prior before the thrush appeared. The thrush landed on the dance perch right next to the g. WBR came immediately to scare him off, but instead the thrush grabbed WBR's leg with his mouth and hung on until WBR grabbed the thrush's head with his mouth. With some squealing the birds tumbled to the ground. The thrush left and WBR didn't miss a beat - he continued with the display which ended in a copulation. The unb g didn't seem to mind the interruption. Julia Young - Lion



D. Val,  
E. H.  
2004

## Journal

Isla Boca Brava, Chiriquí Prov., Panamá

3 April 2004

We set three nets this morning and caught seven manakins near the FBE road. All were native birds - either unbanded (greens and a red-cap) or birds banded in the nest (one DM from 2001 and a CB from 2002). I collected feathers from the head, breast, back, & rump of each for spectrophotometer analysis - I do wish that I'd brought the Ocean Optics machine to the field now. We did one watch each and intended to reopen the nets but Frank kidnapped Julie for a mid-afternoon fiesta, and work was delayed by an hour or so. We still managed to open nets in the afternoon and caught one female - RRR #023. During the morning we captured XYX, and she turned out to be a different individual (#629) than those listed in the MBL. We completed her band combinations.



DuVal,  
E. H.  
2004

## Journal

Isla Boca Brava, Chiriquí Prov., Panamá

4 April 04

The day was still and hot, but the manakins were still fairly active. Julie and I caught four in the morning (plus bycatch) and did watches for the rest of the day. The nest that I suspect is BAG's has two eggs today. Amelia arrived for a night, married (!) and with her esposo Ricardo.

5 April 04

Today I heard a Laughing Falcon calling conspicuously from the large trees near the first beach. I went to investigate after my fourth watch but couldn't find it. Julie saw RYV copulate twice in the afternoon (with the same female). We spent a portion of the day entering data, though I've decided that late morning data entry is more effective than afternoon data entry: the birds seem to become very active after lunch but, after a brief spurt of morning activity, don't do much from 8:30 to noon. It could just be the weather we're having now - very hot



DuVal,  
E. H.

2005

# Journal

Isla Boca Brava, Chiriquí Prov., Panamá

5 Apr. cont

and still. I feel like we've got a pretty good handle on who's where for our main sites, though the actual number of observed interactions with all bands read is ~~def~~ depressingly low. Now to expand and survey other areas for banded birds / new display territories.

6 April 2004

Today I staked nest J-3 after bleeding and banding the chicks, and confirmed that the female was WBV (LTE), who has been nesting in the same area (SLNI) since 2000. I also bled the chick in BOV's nest (<sup>SLP area,</sup> near OCV). There is only one chick left in that nest, and he had lost the <sup>Al.</sup> band that I put on when I first bled them and staked the nest. BOV may have removed the Aluminum bands (and chick) from the nest. As I left the area, I saw DM GWW, who I believe has been the  $\beta$  at OCV for the last 2 years. Has he started a new territory? Did "SLP" exist before and just not get observed? We've heard QR lately by the restaurant as well. Hot, Sunny day.



DuVal,  
E.H.  
2004

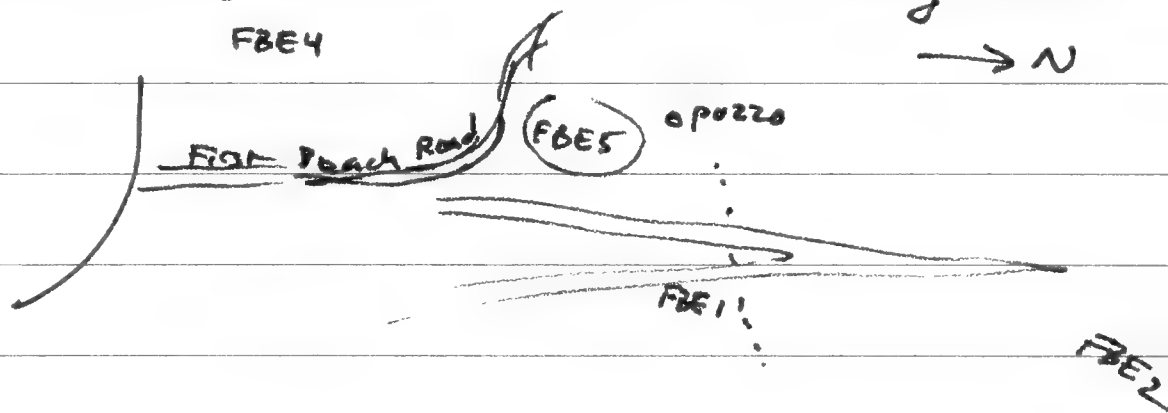
## Journal

Isla Boca Brava, Chiriquí Prov., Panamá

7 April 2004

Today was overcast and still, and slightly cooler than days have been lately. I did a watch at SLP, confirming that GWW<sup>(DM)</sup> is in the area, then opened the bay net that has been closed at FBE4 and did half-hour watches in the area between net runs. I caught one unbanded female, who was horribly tangled, double-bagged, twisted, etc.

I observed YVB (DM), currently  $\beta$  at FBE2, doing a quite serious SF-1 for an unbG at a site I'm now calling FBE5





DuVal,  
E.H.  
2004

# Journal

Isla Boca Brava, Chiriquí Prov., Panamá

8 April 2004

Temperature range since last checked =  $25^{\circ}$ - $37^{\circ}$ C  
or  $76$ - $99^{\circ}$  F. Today was on the cooler  
end of things: it started overcast and  
extremely busy throughout the study site. I took  
ad hoc observations as I walked to BRI,  
and nearly every dis



DuVal,  
E.H.  
2004

# Journal

Isla Boca Brava, Chiriquí Prov., Panamá

9 April 2004

This morning I saw AW- (DM) SF-1 for a ♀ on the dp at this year's SBE16. The fact that AWW + AWP are partners at this site really does make me wonder whether the males are phenotype-matching based on color bands. I did a watch in the area to try to verify which male was doing displays for females, but saw nothing much additional.

I continued on to do watches at CAS and LOT. Nothing much happened at CAS (VGG is still there), but at LOT I saw an interesting dominance dispute. One male started SF-1 for a ♀ (VGG, hatched near BTR, I think) and after a long time APA (DM), the apparent alpha, flew in and <sup>(aggressively)</sup> evicted the other male to continue displaying for the female himself. Later in the watch, APA was again displaying for a female when the other male flew in with a different DM partner and tried to pip-flight the female back to the second LOT dance perch. I should note that while APA still used the long-blogged perch in the flat area which is visible from the south trail, both he and the other males used a new perch slightly east & uphill, just



DuVal,

E. H.

2004

## Journal

Isla Boca Brava, Chiriquí Prov., Panamá

9 Apr cont

above the vine tangle where they have displayed in the ~~3~~ past. When the two other males began PF-2, APA broke off his display to chase them one at a time from the area. In the middle of this, ♀ WOW showed up, reminding me that we hadn't found her nest this year. I looked toward the dance perch and... there it was! A low nest with two chicks, 1+2 days old. WOW mobbed me as I bled them. As I continued to observe the dance perch area, Christina Mueller's two large dogs came down the path with her houseguests and proceeded to boisterously greet me, halting all manakin action. I chased ~~them~~ from the area when Boxie began investigating the nest area.

Later in the afternoon I followed a QR bout uphill from the SPY1 dp and found RYS (DM) singing with (B)W(B) (DM). RYS was unbanded until the last day or so of the 2003 field season, when I whistled him into a net. He was a territory-holder last year + seems to still be one this year. The males flew from QR to displaying for a female, reaffirming their territorial status.



DuVal,  
E. H.  
2004

## Journal

Isla Boca Brava, Chiriquí Prov., Panamá

10 April 2004

I staked nest E-2 and saw VOY (G) acting very nervous. The chick is doing fine. I entered data for the rest of the morning and part of the afternoon, switching off with Julie. Then I did a watch (1-hour) at BTE4/1, where RGW and GBY were duet-singing for long, high bouts. The watch was interrupted after 20 minutes when a down-whistle chorus of surprising intensity convinced me that I needed to check out the threat. Down near the BTR spring palm area, <sup>(Lance-tailed are the only manakins here)</sup> manakins were down-whistling like crazy, mobbing a particular spot of underbrush. There were also yellow-green vireos, a male red-legged honeycreeper, and Swainson's thrushes, as well as a few flycatchers. As I approached, a largeish, mottled brown bird slightly smaller than a roadside hawk flew away toward BTR. I followed and caught a glimpse of a medium-sized owl <sup>(estimated)</sup> (2/11) perched low and standing very erect. The tarsi were feathered, and there were intricate patterns of darker brown on the cinnamon-brown wings.



DuVal,  
E.H.  
2004


## Journal

Isla Boca Brava, Chiriquí Prov., Panamá

10 Apr cont

and back. The owl flushed again and the wings again appeared to have lighter brown mottling in flight. Maybe a Mottled Owl - I didn't see the head.

I flushed ABG (G) off of Julie's BTR nest, and got her bands. Then I finished the watch and vegged nests. The female nesting by the SBEI pump is indeed BAG (G), and I took one egg for genetics. The embryo was 5-6 days old and still small, but with a large head, with large translucent lobes behind the eyes.

I need to look at an embryology book re chick development when I get home, just to brush up... 

Julie found a Common Pauraque nest near ACA4 by accidentally flushing the parent.

At night we went with Frank and Yadira to their house to sit on the porch drinking Balboa and talking. As we sat there, we heard two types of owls: one that just gives a "poo" call ~~into~~ regularly at intervals of about 10 seconds (I thought it was the spectacled owl, but after reading Ridgley & Gwinn again last night I'm not sure). The second was a more varied call, w/ repeated short notes rising in pitch at <sup>the</sup> end.



DuVal,  
E.H.

## Journal

Isla Boca Brava, Chiriquí Prov., Panama'

11 April 2004

This is our last full day of the short field season. I woke up at 4:30, full of nervous energy and planning how to make the most of the day. But the day itself has started out clear, calm, and still - just what manakins don't seem to like. My first observation session was almost completely quiet. Eileen would say "never trust a manakin."

Crested Oropendolas were in the area as I started the watch at BRI.

Before that, Julie showed me the Pauraque nest - a ~~low~~ depression in the leaves, with leaf litter cleared away to make a slight bowl. The eggs are pinkish with brown speckling and are about twice the volume of a lance-tailed manakin egg. We again flushed the female (male?) looking for the nest - she blends in so perfectly that we couldn't see her at all.



D. Val  
E. H.  
2004

# Journal

Isla Boca Brava, Chiriquí Prov., Panamá

12 April 04

Temperature range since last measured =  
78 - 90°F, 25 - 33°C.



E. H. DuVal

Field Notes

2005

General Index

Catalog EHD 027 - 031

Journal 13 March - 8 July



DuVal,  
E.H.  
2005

## Catalog

Isla Boca Brava, Gulf of Chiriquí, Republic of Panamá

9 April 2005

EHD <sup>027</sup>~~024~~ Chiroxiphia lanceolata chick, days old  
Dead in nest S-1 by first beach. Apparently  
abandoned after mother was mistreated at the nest.  
3.5g weight.

5 April 2005

EHD <sup>028</sup>~~025~~ Chiroxiphia lanceolata chick, days old.  
dead in nest with EHD <sup>029</sup>~~026~~ - abandoned due  
to researcher disturbance. 5.0g.

EHD <sup>029</sup>~~026~~

Chiroxiphia lanceolata chick, days old.  
found dead in nest at 14:00 on 15 Apr 05.  
Mother captured at the nest the  
previous day at ~ 0800. Sibling of EHD <sup>028</sup>~~025~~.  
Alive and begging hard at 1100 on 15 Apr.  
5.0g. Bands removed for reuse, chick  
stored in EtOH.

12 May

EHD 030

Chiroxiphia lanceolata fledgling; 20 days old  
weight = ~~9.0g~~ 10.5g  
Abandoned chick from nest S-10; raised in captivity  
from 29 April - 12 May. See field notes for details.  
skull ~ 10% ossified; fat = trace

29 May

EHD 031

Chiroxiphia lanceolata chick  
Youngest chick of nest S-14  
wt = 12g. Infected eye; bled to death during routine  
blood sampling.



DuVal,  
E. H.  
2005

## Journal

13 March 2005 - Panamá City, Panama

I arrived in Panamá City on the usual Continental flight and waited in the airport for Anne Bjorkman to arrive. Steven Barbaris will join us tomorrow night. I paid \$100 in extra baggage.

My flight = \$44.45

14 March 2005 - Anne and I went to ANAM, where I found that they had no record of my permit application! Luckily, Ibélise ~~Ana~~ Añino sat down with me and arranged the paperwork then and there. She says the permits should be available tomorrow. We also hit El Mochetazo, Audiofoto, and El Rey for more field supplies

expenses: 2 tripods: 67.20

2 stopwatches: 14.68

food (Rey) 40.

passport photos (2 people): 4.20

El Trapiche : 16.49 +1.75

Hotel room : 27. +33

Taxis : to Anam 1.75

ANAM → Audiofoto 1.75

Rey → otra Audiofoto 1.25

Audiofoto → Hotel 1.25

Balboa → Trapiche 1.75

Alhambra → Hotel 1.75

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DuVal,  
E.H.  
2005

## Journal

Isla Boca Brava, Gulf of Chiriquí, Panamá

measure duetting synchrony in this species...  
Heavy rain last night for a long while ( $>1$  hr?). In the afternoon we switched from the "new concrete ranchos" to cabin 5 (water inside the house! Private bathroom!!), which will cost us \$80/wk. That's a big jump from the \$56/wk I was paying before, but what is there to do...



DuVal,  
E.H.  
2005

## Journal

Isla Boca Brava, Chiriquí, Panamá

19 March 2005 - Today we continued the process of teaching Anne & Steve the field site. I walked them through EDM, GUL, BTE, PHT1 & 2.

In the last few days they've also learned FBE2, ACA4, SBE2, CCL1, SNK1, CUS. I was stung by a large scorpion today and I still can't feel my tongue. Or my teeth for that matter, and my hands are tingly.

I found a nest with chicks today for the first time this year. The chicks look about 4-5 d. old.

For tomorrow: we'll do "review" watches at places everyone now knows in the morning, then learn two or so new places in the afternoon.

20 March 2005 - I bled the chicks that I found yesterday and had Anne and Steve do observation sessions. Anne saw a Tayra (!) at SNK display area. The species has a check next to it in the restaurant's mammal book, implying that someone else has seen it here, but it's a first sighting.



DuVal,  
E.H.  
2005

## Journal

Isla Boca Brava, Chiriquí, Panamá  
for my field crews.

21-23 March 2005

I switched to a "day planner" style of keeping track of our work schedule - see the appropriate pages of this notebook. (intro pages?).

Early nest-searching has turned up a lot of nests already. We seem to have missed a big wave of copulations, but we're just on time to find the resulting eggs. This is something to keep in mind as I look at activity rates for this year: ♀ visitation shouldn't necessarily reflect mating success when you measure visitation AFTER everyone has mated.

Also different for this year is the early rainy season: it's already quite green and wet in the forest, unlike usual for this time of year.



DuVal,  
E. H.  
2005

## Journal

Isla Boca Brava, Chiriquí, Panamá

24 March 2005 - Overcast all day; hard rain for  $\sim \frac{1}{2}$  hour at night (with my boots outdoors). The birds were quite active, especially in the afternoon, though Anna's territories were slow. I saw BW and BWA dance for a female at BRI 1 - no sign of BOW this year. Likewise GAG is missing. YVA seems to have taken over at EDM. WBR and RYY are still together at CCL1, but RYY is spending a lot of time at CCL2 - is WBR losing another  $\beta$  to "budding"? I saw YPB (former TRJ5  $\beta$ , starter of DPO area) displaying with an "S" DM (banded in nest) at BRI 4. I found a nest with two chicks that were about 9 days old - yikes! Luckily we'll have the annual "Easter Egg Hunt" this Sunday and will hopefully find some of the remaining undiscovered nests then.



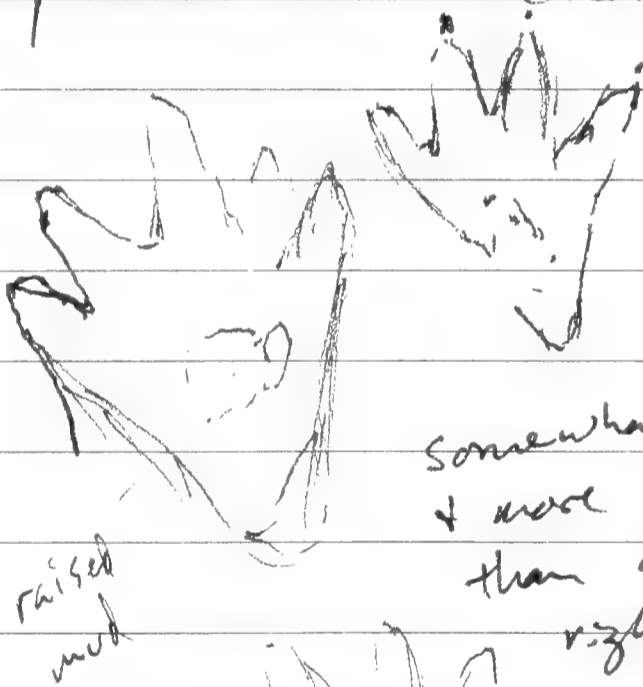
DuVal,  
E.H.  
2005

## Journal

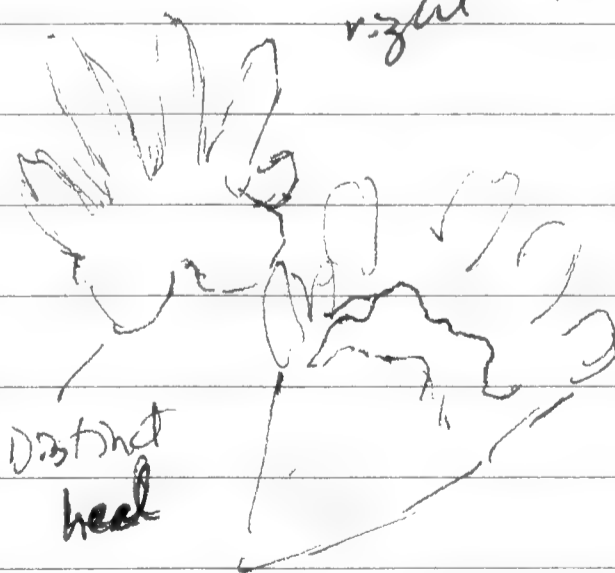
Isla Boca Brava, Chiriquí, Panamá

25 March 2005 - Watches today were interrupted by heavy rainfall in the afternoon. Anne was a trooper and stayed out in the field for about an hour & a half after Steve and I gave up. I showed Steve how to run the data entry macros, then gave Anne a briefer version when she came home & warmed up.

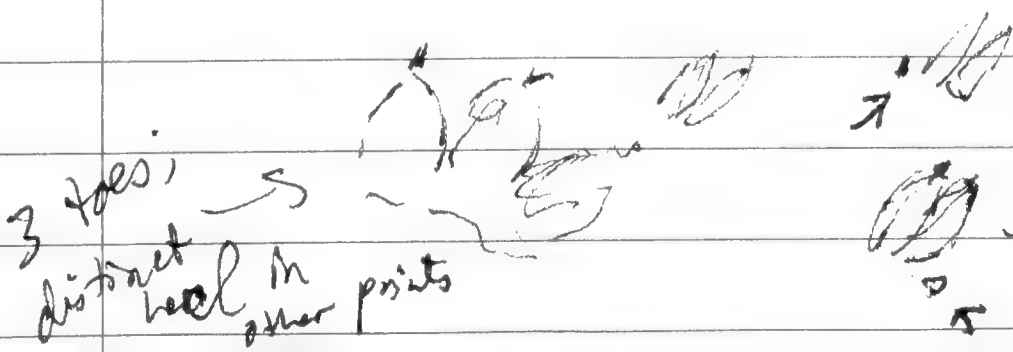
26 March 2005 - After yesterday's rain there was mud in the tracks of "Main Street" and these prints were clear in the morning.



A few feet away but in a different orientation were these:



- blunter toes than first tracks



- almost cervid-like, but w/ small 3rd toe on outside



DeVal,  
E. H.  
2005

## Journal

Isla Boca Brava, Chiriquí, Panamá

27 March 2005 - Today was Easter and so we repeated the traditional Boca Brava easter nest hunt. For once the event was well-timed, and we found a total of 17 new nests, including one with two chicks just a few days from fledging (YVU was the female, <sup>YAA by 1982</sup> + the nest was ~ 10m from where I remember this female nesting in 2002). We've already got blood samples from chicks in 6 nests (all with known mothers) - not bad for our first two weeks of work! There was more hard rain this evening - we still have no rain gauge set up. There were also more tracks on main Street - something with semi-webbed toes...? I found a <sup>rainbow</sup> boa of 2-3 ft. length near BR13 today. He was dark brown with slightly darker half-circle markings, and a white belly. He was sitting very still and half-on, half-off the path, with his mouth askew as though his jaw was broken or he was eating something distasteful. I was sure that someone had clubbed him with a stick + that he was dead, but when I passed by again he moved off slowly. <sup>Iridescent green to brown parts.</sup>



DuVal,  
E.H.  
2005

## Journal

Isla Boca Brava, Chiriquí, Panama

28 March 2004 - A full day of watches

29 March 2004 - We went to David with Frank to check mail + email, and to restock our food supplies. I found out that I didn't get the NSF IRFP grant, and that Chris Conroy didn't receive my email detailing the curatorial work that I've partially completed and intend to finish this summer. So Chris is, of course, livid, and is having mass emails sent stating that "a grad student recently finished with curatorial hours incomplete," etc. Terrific. But there's nothing I can do from here except try to recreate my original list and go to town next week just to send apologetic email. Maybe Chris will have cooled off by the time I get home in 3.5 months. Janis encouraged me to submit the "display interactions of young males" paper to PRS, so I'll try to get that together for next week as well, just to make the David day less depressing. Julian's talk on the development of coordinated singing went really well, apparently, despite a somewhat amusing introduction by Eileen (accidentally, amusing, that is). He has bought a microphone and will be down sometime next month.



DuVal,  
E. H.  
2005

## Journal

Isla Boca Brava, Chiriquí, Panamá

30 March 2005 - The day off. Frank teased me about having so many days off this year, but I believe that 2 days off and one David day each two weeks is the old standard for 4-month field seasons. I spent the morning revising the young male display / OPN paper, and hiked to LOT to bleed + band WOW's chicks in the afternoon. I need to work data entry into the daily schedule, as we've already swamped with data sheets. I also collected the first egg for artificial incubation today - its sibling is still in the nest. <sup>(E-19)</sup>

31 March 2005 - We all staked nests in the morning - there are now 5 nests with unknown moms. We successfully got bands on two of these moms today, and established one band for a third mom. I found a few more nests (!) pushing my total for the year to over 60 nests found, and 41 active. Incredible! One of the new nests <sup>(by Claus's house)</sup> had a chick of ~5 days, + an unbanded ♀ standing on the side of the nest. So tomorrow I'll net for her and bleed her chick, assuming I can get permission from Claus and Mechtild. Light rain in the night.

Paid Frank  
~160 for  
the week



DuVal,  
E. H.  
2005

## Journal

Isla Boca Brava, Chiriquí, Panamá

1 April 2005 - Today we all stalked nests again, and Steve discovered that two of our target females are unbanded. I continued to have no luck with the E-12 female (she's nesting where PYP did last year or the year before - could PYP be getting wary?). I netted for 2.5 hours at the nest near Claus's house (E-41) and at one point flushed the female into the net but she struggled free before I could get a grip on her. Argh! I just took an easy job and made it difficult... Anne entered data for ~1 hr. in the afternoon. We've only got ~18 records entered at this point, and we're producing up to 15 records per day! We might have to drop back to just entering summaries for a while...

While I was mistnetting at E-41, I explored along the coast (John's land <sup>in this area</sup> now belongs to Max from Denmark who has lived in Costa Rica for 15 years). I found a nest of a Mangrove Black Hawk in a tree overhanging the high tide mark. The nest was ~20 feet high and 1.5-2 feet in diameter, constructed of twigs. One of the parents vocalized aggressively and followed me as I walked. I kept an eye out for full-on



D. Val,  
E. H.  
2005

## Journal

### Isla Boca Brava, Chiriquí, Panamá

attacks, remembering my experiences with this nest in past years, but none came. Another Black Hawk (the mate, presumably) circled nearby with two vultures.

It rained in the evening at ~ 7:30pm, though fairly lightly ( $< \frac{1}{2}$ " ). The day was generally overcast.

### 2 April 2005

I'm currently netting, again, for the *ub5CR* female of nest E-41. I'm half an hour into it, with no sign of her yet, and so I'm thinking of details of the project that I have been avoiding and need to address:

#### ① Analyze 1-hour vs. 2-hour watches -

- Are measures of activity rate the same in 1- vs. 2- <sup>session</sup> hr? Run a paired-t test comparing the measures of  $QR + \textcircled{*}$  rate in the first hour vs. the whole session for 2002 data. Also consider: extinction curve of # distinct individuals seen. Repeat w/  $\frac{1}{2}$ -hour watches from 2003 + 2004. Hopefully there's no difference... A major justification for 1-hour watches now is the limitation of mini-DV camcorder tapes (all are 60 min. long)



DuVal,  
E.H.  
2005

## Journal

### Isla Boca Brava, Chiriquí, Panamá

2 Apr [cont.]

- ② Check in with Anne + Steve regarding the video procedures: Standardize distance to display perch, list areas where we aren't setting cameras because the dp is unknown (or for other reasons?). I really like the cameras, because I'm frequently out of sight of display perches and the camera lets me be sure of details like whether the female was on the dance perch, but so far it's also a lot of work for little payoff. This week we added "camera blinds" (mini-drapes of brown or brownish-green cloth over the shiny cameras) to try to minimize disturbance from the cameras. I suspect that most of the lack of displays for females is because most of the nests we've found now have eggs on chicks. The females are busy.
- ③ Delegate nest duties - I'm just plain administering too many nests. To avoid forgetting any, I need ~~the~~ to divide some among Anne + Steve. I also need to make clear the procedures regarding bleeding/banding chicks, and updating nest info on a nightly basis. Dividers will help in this process.



DuVal,  
E.H.  
2005

## Journal

Isla Boca Brava, Chiriquí, Panamá

2 Apr [cont]

(4) Nest veg - What data do I actually need to collect from failed or fledged nests? And why? Potential questions that could be addressed are: how do physical & habitat characteristics associated with nests affect nest success? Hypothesis: nest success is primarily determined by ♀ experience. Confounding factor: ♀♀ nest in the same area repeatedly. If I can ID anything related to nest success, I could test w/ placement of artificial nests. Eg. height - place 3 nests in same area high and low, <sup>add quail eggs,</sup> replicate. What would experienced ♀♀ do that naive ones do not? # visits to nest? Nest visibility? How to test these things?

It is as a factor relating to nest success: expect strong correlation if indiv ♀♀ have better luck and nest in same place repeatedly. Other factors (like weather) won't be sig diff. either.

Try analyzing nest data from 2002 & organize nest veg accordingly.

(5) figure out how to transfer video from mini-DV to the computer.



DuVal,  
E.H.  
2005

## Journal

Isla Boca Brava, Chiriquí, Panama

10 April 2005

I'm staying home this morning to "make paper war" as Frank would say. One key thing to be done is deciding which nest variables should be recorded for failed or fledged nests. To decide this, I looked back at the 2002 nest data (still unanalyzed) to see what patterns emerge. In that year, we did not take data on physical characteristics of old or abandoned (under construction) nests. The trends seem to be:

slope has no effect on fail v. fledge.

nest lit has no effect on fail v. fledge

% cover has " " " " " "

there is a marginal effect of distance to dyp.  
even with outliers excluded.

Possible confound: ♀♀ nest in the  
same place repeatedly - may be the ♀,  
not the nest site?

<30m, no diff; <60m no diff; <100m = difference

There is a hypothesis that larks serve to attract predators in a radius around display areas, and that ♀♀ should nest with an optimal radius to maximize nest success.

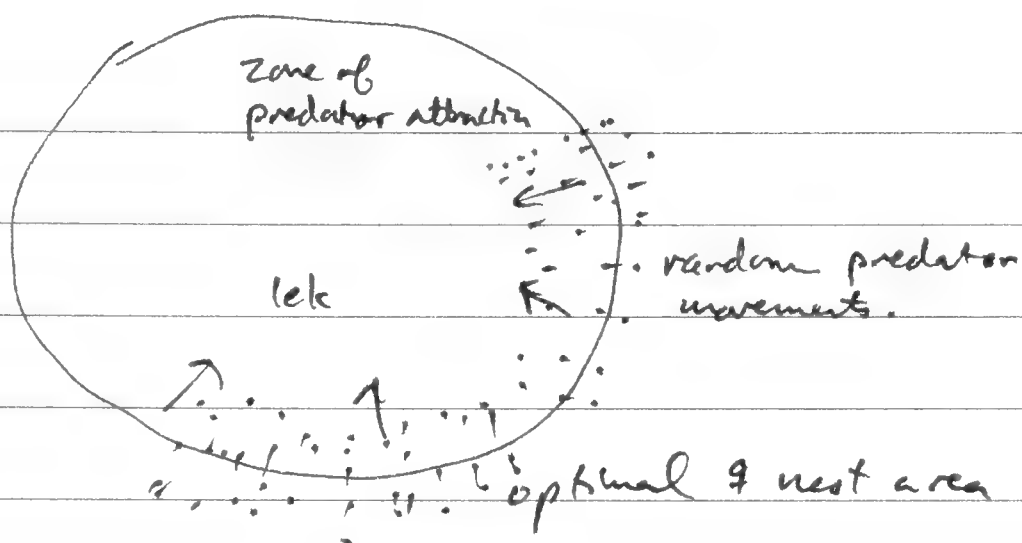


DuVal,  
E. H.  
2005

Isla Boca Brava, Chiriquí, Panama

## Journal

10 Apr [cont]



problems: ① is <sup>optimal</sup> nest habitat the same as optimal display habitat, and therefore the difference is in good vs. bad ~~man-made~~ habitat rather than near v. far from display areas?

(How do you measure that?)

② ♀♀ repeat nest locations (but note same loc is frequently occupied by diff ♀♀)

Test: place nests w/ quail eggs at intervals from display areas, monitor time to fail. 30m 60m 90m?

- 1 treatment set @ each display area

- 20 display areas total (? = 60 nests)

- measure habitat vari's around nests to be sure no diff.

- flag exp nest sites (wk b/f, + put out nests (?))

- place at average ht (1.1m?)

- make nests from real man-made nests.

③ This means I have to find 20 areas that are at least 180m from other areas...



DuVal,  
E.H.  
2005

## Journal

Isla Boca Brava, Chiriquí, Panamá

10 Apr {cont}

- Materials needed:
1. 60 failed or abandoned or old manakin nests
  2. 60 forked sticks to attach them to (branches? bamboo?)
  3. Some way to tie nests to sticks (thread?)
  4. 60-120 quail eggs (1 or 2 eggs per nest?)
  5. 100m tape, or rope marked at 30m intervals\*



monitor daily? every 2 days? for  $18 \times 16 = 348$

? - laying dates seem locally synchronized - does nest initiation relate to ♂ activity in the area? Cause or effect?  
♀♀ nest loc ≠ mating choice, therefore more likely effect of ♀ presence that is beneficial to the ♀♀? Rather than ♂♂ making more noise to draw predators away from chicks.

Finally - problem: no predators usually seen around lek sites, & displaying ♂♂ rarely die

Proximate cause not answered: ♂♂ defend/warn call @ predators b/c of vigilance in display areas?



DuVal,  
E. H.  
2005

## Journal

### Isla Boca Brava, Chiriquí, Panamá

10 Apr (cont)

this may be more likely than decoying  
predators away from nests, as ♂♂  
rarely suffer predation.

test: present model snakes  
at 30 60 90 m from dp, measure  
latency to discover, who discovers  
them (or v. ♀) L/C of ♂♂ or b/c of breeding  
concentration



DuVal,  
E. H.  
2005

## Journal

Isla Boca Brava, Chiriquí, Panamá

15 April 2005 - partly cloudy all day - moderate amounts of manakin activity. I spent the whole day mistnetting for unbanded females with nests. I caught two more of these unbanded mothers, but to my dismay found that the chicks in at least one nest targeted yesterday had died. Steve checked them at 11:15 am and found them extremely hungry. I stopped by on my way back to the cabin at 14:00 and found them both cold and freshly dead. There was one ant investigating one chick, but they were otherwise untouched. I collected them, & removed their bands for reuse (~~see~~ I banded #700 today, and the metal bands ran out at #800). I preserved them both in EtOH with the S-1 baby. This really is a particularly high nest failure rate after catching the female. I'm not sure what I can do about it - I've got to ~~check~~ band the females to check paternity... Perhaps more broad-scale mistnetting away from the immediate nest area? Either way, my heart's just not in mistnetting these females now.

While I was targetting an unbanded female near the EDM area, I caught a



DuVal,  
E.H.  
2005

## Journal

Isla Boca Brava, Chiriquí, Panama

15 Apr [cont]

flycatcher (Panama or Dusky-capped) that had strange growths on both its feet. It looked almost like bumblefoot - some kind of fungal infection?



DuVal,  
E.H.  
2005

## Journal

Isla Boca Brava, Chiriquí, Panamá

guess I thought I hadn't written about this day...

15 April 2005 - I spent today and yesterday catching unbanded females at their nests. Today I only caught two new females, though one included three "bycatch" manakins in the same net, and for the other I caught two possible females by the same nest at the same time. We're unfortunately seeing a particularly high rate of nest abandonment after I catch the females this year. Today Steve alerted me to a nest of too-hungry chicks whose mother was targeted yesterday. He saw them at ~11:15 am, and by the time I checked them at 14:00, they were both dead. But. There seems to be no good option for sampling these females otherwise, and so I have to continue netting them. The only other solution would be to revamp the site-wide intense mist-netting, and that's not a great option with 10 nests of known unbanded mothers present in the same week! In nest E-35, there was a 4-day-old chick and an egg - in the suspicion that it wouldn't hatch, I took the egg to the incubator - at least we'll be able to sample it.



Dukal,  
E.H.  
2005

## Journal

Isla Boca Brava, Chiriquí, Panamá

16 April 2005 - clear and sunny for most of the day

We seem to be having a revival of the summer we never had - little rain, dry clothes, Frank fretting over water (because of a broken pump, though, not because the wells are dry). I didn't net any more unbanded females with chicks today, simply because I was wearing myself out on that task. Instead I did five watches, and vegged the nests out by Claus's house. At my acacia area watch, a Little Tinamou walked by and I got a great look at it - only my second tinamou sighting in all these years. Anne saw her first manakin copulation (at FBE2) today - which makes two consecutive days of copulating manakins for us. We seem to be entering the second round of nests. I found three empty nests today, and maintain hope that they will soon have eggs.

I went to check nest E-47 ("The World's Highest Manakin Nest") and found a baby still in the nest. As I winched the branch over to where I could reach it, though, this baby fledged in a perfect fluttery flight to a high branch.



DuVal,  
E.H.  
2005

## Journal

Isla Boca Brava, Chiriquí, Panamá

16 Apr (cont)

I couldn't tell whether he still had any bands or not (the first round of bands were applied when the chicks were quite young). As all this happened, female RYF was mobbing, confirming her maternity. When I mistnetted her I was not at all sure she was associated with this nest, as it's hard to place a net close to such a high location. That's a relief...



DuVal,  
E.H.  
2005

## Journal

Isla Boca Brava, Chiriquí, Panamá

18 April 2005 - Heavy rain PM for ~45 min

Today I was blessed with incredible luck. I was (again) targeting unbanded females that had chicks in the nest - there are just so many this year! After I set a net at E-25 (CCU area), I went nest-searching and found a nest of chicks that were a day or two from fledging. The (banded!) mom mobbed me fiercely (as fiercely as manakins ever mob) and I got her to. I bled and banded those chicks, then returned to find the E-25 female in the net. I figured out that E-50 also had an unbanded female, so I moved the net across the road to that nest and caught her as well. In the mean time, I left my backpack on the first beach road in a blind corner, and Frank ran it over with his truck. It was a direct hit, but I think the worst damage was a slightly bent sunglasses frame. He missed the GPS, which was in the bag, and it took me a few scary seconds to realize that my binoculars were safely around my neck. Before the rain started at about 3 pm, I caught unbanded females at two more nests. I'm



DuVal,  
E. H.  
2005

## Journal

Isla Boca Brava, Chiriquí, Panamá

18 Apr.

still worried about the high rate of nest failure after I catch these unbanded females. I checked E-28 (the only female I caught yesterday) and the chick was cold and begging strongly. I fed him 4-5 ripe *Miconia* berries, and did the same for E-25. E-50 was warm and not hungry, though it had been several hours since I caught his mom - she seemed especially alert when I released her, so it seems that she was unphased by the ordeal.

When the rain started, Steve and I came home to work on data for the rest of the afternoon. Anne again won the toughness award and stayed out longer than us. At 6:30 pm, I decided to go check E-28 again, with the idea that the mother would have brooded him during the hard rain and fed him then: if she hadn't abandoned, I should find a warm, dry, satiated chick. Instead, the chick was cold and wet, and begged strongly. So I took him home to serve as our pilot chick for determining whether it would be feasible to raise young males in captivity for experiments on learning. I placed him in one of our old nests (collected for the pending



DuVal,  
E.H.  
2005

## Journal

### Isla Boca Brava, Chiriquí, Panamá

18 Apr.

quail egg experiment) in the incubator, and fed him about 1.5 cc of Exact chick food mixed with boiled water. He ate well, though the food went everywhere and I had to spend some time cleaning him with a Q-tip to be sure the ants wouldn't eat him alive. Later in the evening (~10:00) I tried to feed him again, but he was fast asleep and wouldn't beg. The incubator hadn't switched on, so I fixed the connection and left him until morning. The eggs that had been in the incubator were both collected this afternoon (ie opened & the contents stored in EtOH). The one from nest E-35 was dead, as I suspected. I put this one in the incubator because I suspected it wasn't going to hatch but I still wanted the genetic sample. The chick was  $\pm 10$  days developed, but clearly long-dead. The E-49 egg I crushed accidentally when cleaning the incubator. E-49 had already failed, but I was considering an attempt to raise the chick (as I'm now doing with the E-28 baby instead).

The E-28 chick has been dubbed Pilot and will be referred to by this name in my later notes.



D. Val,  
E.H.  
2005

## Journal

Isla Boca Brava, Chiriquí, Panamá

19 April 2005

Pilot was not responsive when I roused him from the incubator at 6:15am to feed him. But just as I was about to give up, he begged hungrily and ate a good quantity of Exact chick food. I fed him again at 7:30, then took him with me to EDM where I was getting for the E-36 female. As I netted, I searched for *Hirtella* berries. He was unable to eat a whole berry, <sup>(just because of the size)</sup> but if I cut slices of the fruit off he ate them hungrily, then ate the seed and its remaining flesh as well. (The seed is only slightly smaller than his head.) He regurgitates the seeds ~ 5 minutes after eating them, and produces a big, gelatinous fecal sac after being fed. He also produces smaller fecal masses that are not gelatinous, which he defecates over the side of the nest so that they fall away from it.

14:00 - Before setting my net at the S-6 nest by bridge, I went to recover my machete that I left out in the rain yesterday (by S-9). Right near the nest, I found a green overturned beer box, beige baseball cap with an embroidered Nike symbol, a long and



DuVal,  
E.H.  
2005

## Journal

Isla Boca Brava, Chiriquí, Panamá

19 Apr

Sharpened machete, and one spent  
shotgun shell. What's good enough to  
shoot around here? Monkeys? Iguanas?  
Os? I assume those are Roberto's  
things, since he's skipping work today  
and they weren't here yesterday.  
I know Frank doesn't permit hunting,  
and I don't like the idea of  
someone shooting while we're in  
the forest.

---

This evening the captive chick  
experiment came to an abrupt and  
tragic end when we came back from  
dinner to find "Pilot" dead and covered  
in ants. They were already well on the  
way to eating him, & had apparently killed  
him for that purpose. The culprits were  
the small, painful black ants that have a  
nest outside our door. Pilot had eaten  
well all day, including about  $\frac{1}{4}$  of a  
film canister of Miconia berries after lunch  
and two Euphorb seeds with ants. I also  
fed him one spider that I found near SLN3.

So getting captive chicks to eat is  
no problem - defending them from ants seems  
more tricky.



DuVal,  
E. H.  
2005

## Journal

Isla Boca Brava, Chiriquí, Panamá

20 Apr 05

Julian arrived late last night, and today was the day off. Anne and Steve visited Greg's boat while Julian and I rearranged the cabin to accommodate 4 people (and additional research equipment). The rest of the day was truly "off" - we went swimming at second beach, sat around and talked, etc. Spotted Sandpiper at 2<sup>nd</sup> Beach. About a week ago, I saw an <sup>American</sup> oystercatcher here as well.

21 April 2005



DuVal,  
E.H.  
2005

## Journal

Isla Boca Brava, Chiriquí, Panamá

28 April 2005

I was again netting for unbanded females with chicks today. The <sup>nest</sup>A-4 mom was caught as she mobbed me after I banded + bled her chicks. She flew away strongly and suffered no feather loss, so I hope that she won't abandon the chicks. The second nest of the day was S-10, which has chicks just slightly younger (8 days?) than the A4 nest. That female, too, mobbed me as I bled the chicks, but she nicely avoided the net which was somewhat lower than her mobbing path. After about 10 minutes I retreated to see if she would fly lower with a less direct threat. When I checked the nets, I found only the larger chick still in the nest. The smaller one was on his back on the ground with a small amount of blood under one wing. It seems that the female threw him out of the nest, possibly because of the presence of blood. Both chicks had one plastic legband, & were placed in the nest so that the sibling shielded the banded leg from view. The chick that was on the ground had a yellow band, while the chick in the nest had a red band. I cleaned the residual blood off of the yellow-banded



DuVal,  
E. H.  
2005

## Journal

Panama City, Parque Metropolitano, Republic of Panamá

Mar 15

15 March 2005 - We went to the Parque Metropolitano in the morning where we saw an array of interesting birds: dancing lance-tailed Manakins (with a ♀ on the dp), four species of wren (rufous-and-white wren\* (*Thryothorus rufalbus castaneus*); black-bellied wren (*T. fasciatoventris*); Rufous-breasted wren (*T. rutilus hyperthrus*); and housewren). Also keel-billed toucan, red-throated ant-tanager, streaked flycatcher, blue dacnis (♀ fighting - fell to the ground at our feet). Crimson-backed tanager, white-<sup>shouldered</sup>~~winged~~ tanager, Euphonia sp., Crimson-crested woodpecker, & an undetermined species of Mot-mot. Also fork-tailed flycatcher. We then picked up our permits from ANAM (\$5) and went directly to STRI for their weekly seminar series. I talked with Neil Smith and met up with Sam Diaz-Muñoz, who fits in beautifully in Panamá and saves money by walking where I would taxi. We stopped at El Machetazo in the evening, then parted ways with Sam and ate at Cafe Manolo.



DuVal,  
E.H.  
2005

## Journal

Isla Boca Brava, Gulf of Chiriquí, Republic of Panamá

March 16

16 March 2005 - to Isla Boca Brava

I changed \$200 in Traveller's Checks <sup>(-2 fees)</sup> and finally got to call Frank who said it was OK to come to the island. We arrived by ~5pm ~~pm~~ because Frank had alerted Jovené (Junior), who had been waiting for us at the crossroads for over an hour. I paid him \$20 for the taxi to Boca Chica because of the wait, and extracted a promise to teach me to use a lasso. We were immediately pressed into the beer-and-gossip ritual on the island and barely unpacked before going to bed.

March 17

17 March 2005 - We walked the length of the study site, stopping at key display areas to see how Anne & Steve do at band reading and to get them used to walking off-trail. The next few days will be "orientation" to the island. We saw a pair of Laughing Falcons duetting in their typical "guaco" call near the first (easternmost) beach. The contribution of each individual is different: one says "gua-gua-gua-gua" and the other fills in "co...co...co..." They frequently get off by half a beat & change rhythm. It would be easy to



DuVal,  
E.H.  
2005

## Journal

### Isla Boca Brava, Chiriquí, Panamá

28 Apr [cont]

chick and replaced him in the nest, again arranging the chicks so that their leg bands were hidden by each others' bodies. When I checked the nest again after lunch, the youngest chick was again gone. As I searched the ground for him, the female wobbled into the net (finally) and I gave up baby-hunting for banding. I'm not sure why she picked on the littlest one - the second round of baby-tossing took place after at least one trip to the nest with both chicks left in place. The female (now VFV) was badly caught + is likely to abandon the nest anyway at this point.

29 April 2005

The S-10 female did abandon (and the A-4 one did not). I returned to the S-10 nest in the afternoon, ~ 23 h. after the female was captured. The remaining chick was hungry and there were many large ants in the nest, apparently attracted by the ~3 undisposed-of fecal sacs. The ants were apparently biting the chick as well, as he was making a squeaky alarm call and writhing in the nest as



DuVal,  
E.H.  
2005

## Journal

Isla Boca Brava, Chiriquí, Panamá

29 Apr [cont]

I approached. I took the chick and fed him a few Miconia berries that I had brought along in anticipation of the abandonment. With "Red" in tow (he's got one red band) I netted the E-58 female <sup>(now OAW)</sup> near Fen and then headed home. I'm not sure what to predict regarding OAW's abandonment potential - she froze on the nest as I set it a few feet away from her, and lost no feathers.

Anne and I have been discussing a side project on female personalities - there seems to be a strong divide among "mollers", "flushers", & "freezers" - I wonder if the personalities are stable among nests for the same female, and among years. Is there a differential rate of success for fledging young for each type? How can we standardize personality measures in females?

30 April 2005

I again spent the whole day on nest errands. I caught two unbanded mothers in the morning, one of which was a red-eye female nesting in exactly the same place as PRW did in several previous years. In the afternoon I hiked all



DuVal,  
E. H.  
2005

## Journal

Isla Boca Brava, Chiriquí, Panamá

30 Apr. [cont.]

over the field site banding and bleeding chicks in various nests. The weather was tourist-perfect (which means it was awful for manakin activity - sunny and clear). It got briefly cloudy in the afternoon just long enough to let Julian get a few *guc-uro* bouts recorded.

1 May 2005

"Red", the second attempt at raising a manakin chick, is coming along nicely. He gained one gram since yesterday, <sup>now</sup> and is eating a lot. I'm feeding him *Miconia* fruit, *Amstelia* fruit, and Xact brand baby bird food. He eats it all with gusto. We each spent part of the day dealing with our out-of-central data. I digressed into dealing with the reviews of the plumage paper for Conder - It looks like I'll have to go to David this Wednesday to handle that. The NSF reviews (IRFP grant) were generally positive, and all said encouraging things about Bart Kempenaers and his lab group. All also emphasized that I need to publish what I've done so far. Guess I'd better reformat the DPM paper and get it back out - but to where? Behavioral Ecology? I did watches in the afternoon and Anne babysat Red.



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## Journal

Isla Boca Brava, Chiriqui, Panama

2 May 2005

I'm attempting to keep better track of what I feed the chick (Red), and so have been keeping a list. So far he's eaten:

5/1/05 at 11:00 pm - 3.5 cc Exact

5/2/05 at 6:15 am - 2 cc EXact

6:50 1 cc EXact

7:40 4 *Miconia* berries (small + purple)

8:05 5 "

8:44 5 "

0903 4 "

0912 2 "

0924 2 "

0945 4 "

1015 4 "

1046 5 "

1113 3 "

1232 8 "

1250 8 "

← (first fecal sac with *miconia*)

+ 1 red berry w/ mostly flesh from near claws

Despite my best intentions, record-keeping tailed off in the afternoon. Red ate at least 20 more *Miconia* berries and 2.5 cc of Exact chick formula. He is hungry all the time.



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# Journal

Isla Boca Brava, Chiriquí, Panamá

6 May 2005

Red weights 11g today (9:45am).



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## Journal

7 May 2005

Today I saw two down-whistle choruses that were fairly intense. I didn't see the stimulus for the first (during a CCL5 watch), but in the second <sup>(at RL52)</sup> I saw a baby boa constrictor silhouetted on a leaf. Lance-tailed manakins approached, diving, and hovered near the leaf, then returned quickly to other perches, flicking their wings several times before hovering again.



Mobbing manakins included BRW (DM) and several unbanded birds (G and RC).



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## Journal

Isla Boca Brava, Chiriquí, Panamá

8 May 2005

Today Red fledged - which is appropriate as he is 16 days old on the nose. I netted alone at EDM for the morning from 9-12, and kept Red with me. He spent part of the time perching in a tree where I placed him. Then, after I put him back in the nest, he deliberately climbed up on the edge and took a flutteny leap to the ground. He also developed "attitude" in the space of two hours. He started actually assessing his environment, tracking more than just my fingers with his head, responding with a "churp!" when I snapped my fingers, and (a real first) refusing certain types of food (at least some of the time). By the evening, he was able to hop/fly from his nest to the edge of the box. He's fully feathered (except for his head and tail), though his body feathers are extremely fluffy + downy. We had heavy rain in the evening starting at 4:45pm and lasting until about 7:00pm.



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# Journal

9 May

Isla Boca Brava, Chiriquí, Panamá

Julian and I did watches while Anne and Steve went to David today. I had the chick, Red, with me for the morning, and left him in the photo cage for the afternoon because he was getting too active to keep tabs on. Some notes on his behavior:

1. He gives a "churp!" call every 3-4 sec. when hungry, regardless of whether he can see you (calls more frequently if you approach)
2. When he's less hungry, he stays quiet until I call him (with a tongue-clucking noise or by calling his name)
3. His gape is now mottled dark grey and yellow (formerly all yellow)
4. Head still unfeathered, Tail slightly in pin.
5. Slight hook developing on tip of beak
6. Finally he sometimes actively bites <sup>meats</sup> berries - he bit and held onto several on the tree, but <sup>(when held up)</sup> was unable to pull them off.
7. He flew with apparent intent to Julian's shoe and to my leg (which he hit + fell off of)
8. He takes multiple hop-flights along the



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2005

## Journal

Isla Boca Brava, Chiriquí, Panama

1 May [cont]

ground, but seems to have problems getting lift.

9. He is about 1 day away from being able to fly out of our reach, but doesn't yet know to fly BACK when hungry (he just sits and begs).



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## Journal

10 May

Boquete, "Mi Jardín Es Su Jardín" garden, Chiriquí highlands, Panama.

Weather: Clear and sunny, no rain

Julian Kapoor and I left at 0900 from Isla Boca Brava to go on a one-night "vacation" in honor of his birthday. We took Chino Loco's bus to Horconcito, and got a lift from "Pollo" (Ruben) Villalobo to David. In David, we called Finca La Suiza (near Fortuna, Chiriquí) to arrange for a room, but were told they were full for the night. Instead, we went to Boquete where we settled in at "Sueños del Río" along the main river that runs through town. We walked through town and uphill toward the Sendero de los Quetzales, stopping at Cafe Ruiz for a coffee. It was already quite late, so instead of attempting to make it to the foot of the Sendero, we stopped at "Mi Jardín es Su Jardín," a privately-owned garden that's open to the public. The gardens are manicured and decorated with whimsical statues and buildings, and there was abundant birdlife. We loitered for a while, had a picnic, & headed home to "Sueños."

Species: Red-legged Honeycreeper ♂♀ - 4

Clay-colored Thrush (feeding fledgling) - 10

Blue-and-white Swallow - 20

House Wren - 2



11 May

Finca La Suiza, near Fortuna, Chiriquí, Panamá

Weather: Clear & Sunny AM, rain at 3:30pm.

We took the 8am bus from Boquete to David, and another bus (Changuinola) to Finca La Suiza. We signed releases, paid \$8 each for use of the trails, and set off to hike the "Short Circuit" loop. As soon as we got off the bus I noticed Lance-tailed Manakin duet song coming from near the highway. I didn't realize that they would be this high up in the mountains (though I did see them in Parque La Amistad in 2000). As we hiked, we ~~I~~ identified 3-4 display areas on the property. These were much more spread out than those observed on Isla Boca Brava.



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## Journal

Isla Boca Brava, Chiriquí, Panamá

12

13 May 2005

Julian & I got home after a few hours of sleep at Pepe's house in Horconcito. Anne and Steve were out in the field when we arrived, so we took the time to shower, eat, unpack, and organize the (incredibly messy) cabin before going out to do watches. Red was hungry, so I fed him some of the large Miconia berries that I collected in Finca La Suiza.

We fed him fresh local Miconia (the small purple sort) at lunchtime, then left him until 5pm while we did watches and nest checks. When we got home, Red was hungry, "churp"ing and begging, so we took him out and fed him two of the large green Miconia, freshly picked. After only two berries, he stopped eating and closed his eyes. He wouldn't beg any more, which is highly unusual for him, and he seemed cold. Julian warmed Red in his hands for a few minutes, then we placed him in the holding pen on a low perch over the heating pad. I covered the cage with my "blind" to keep out drafts, but when I checked him in an hour he was already dead - lying on his back.

4

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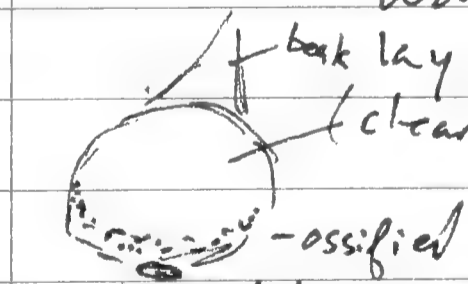
## Journal

Isla Boca Brava, Chiriquí, Panamá  
12 May 2005 [cont]

with legs in the air, already stiff. Could the highland Miconis have killed him?

It's true that I never saw manakins eating this fruit, and I just assumed it would be OK because of the <sup>common</sup> genus + similar fruit to Boca Brava Miconia. He had lost weight (10.5g at death, and he was 11g 6 days ago), and so it's also possible that he wasn't getting enough to eat. When I dissected him, however, a small line of fat was clear in the furculum, and his breast muscle seemed well-developed. His skull was ossified only at the base near the occipital condyle. The rest of the braincase

was a ~~see~~ transparent back layer of bone that (clear single bone layer) could be easily dented and then re-formed with your finger. I



occipital condyle stayed up until 1:30 AM prepping the skin, which (as usual) is not straining. Julian claimed personal attachment and couldn't do the prep, though he's much more experienced than me. The organs + tissues all looked fine - I'm not sure why he died.



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## Journal

Isla Boca Brava, Chiriquí, Panama

16 May

weather: drizzling rain from 11:00 AM throughout the day. Heavy rain for most of last night. Briefly sunny + still this morning.

comments: We each did watches in the morning (except for Julian, who recorded ad libitum to sample as many males as possible). We all returned to the cabañas at lunchtime and stayed to organize data in the afternoon. Julie listed chick band combos for entry into the Access database; Steve cross-checked and MBL'ed 2 nest data sheets; Anne entered observation data; and I caught up on field notes + coordinating data with Julian. It was a much-needed if tedious data day. We found a few quirks of the data: the combination BFY was used both for a SLBF ♂ and for a chick in nest E-3, and there is a female banded either WRF or RWF, but the datasheets disagree (only one of these combos has been used so far, so the other is off-limits until we figure this out).

Today Anne saw two females that had both lost broods show up together at FEN.

I saw BYW (DM) at DPO, furthering our suspicions that he's splitting his time between BRI (where he was  $\alpha$ ) and DPO (where he may be  $\beta$ ).



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E.H.  
2005

# Journal

Isla Boca Brava, Chiriquí, Panamá

18 May

Weather: Rain starting at 6:00 AM, lasting until ~9:30 AM.

Sunny from ~12:00 PM.

Today was the "day off," and I decided to stay on the island and organize data rather than going to David. I need to change my plane ticket to go home, but will wait until I hear from Mom tonight so that I know exactly what to do.

Summaries of activity to date at display areas:

ACA4:  $\alpha$ : AAR  $\beta$ : GVB others: PSS, BWG, SWY(RC) <sup>YSF (CB)</sup> <sup>♀♀ near not on dp.</sup> High  $\alpha$ /p AI

note: BWG has abnormal plumage? Green back?

ADS:  $\alpha$ : YWR  $\beta$ : (?) also seen: WSR GAV

BUB:  $\alpha$ :  $\beta$ : <sup>or RPR?</sup> BGR, AYV

BRI:  $\alpha$ : BYW  $\beta$ : BWA <sup>BWA gone since Apr. 9</sup> <sup>Off 1x(?)</sup>  
Activity dropping off since; BYW at DPO since

BTE:  $\alpha$ : RGW  $\beta$ : GBY <sup>YPY RWB(OM)</sup> other: WBS(OM), YSF(CB), GYS(OM), CPR(OM)  
note: YPY  $\alpha$  at OCV; not sure what's up at PHT2

BTR:  $\alpha$ : YVR  $\beta$ : GVA other: YAG? WBS(OM)  
note: GVA also at GUL2, EDM?

CAS:



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## Journal

Isla Boca Brava, Chiriquí, Panamá

23 May

Emily and Julian left this morning for Panama City. Julian returns tomorrow evening while Emily will be in Florida for 2 weeks as her mother is getting a mastectomy. Steve, Anne, and Julie remain to work a couple of days before Steve and Anne leave for a 5 day vacation to Boquete.

Three core watches were watched before the afternoon was rained out. The afternoon was spent organizing nest sheets, planning the rest of the week, and talking about the next 2 weeks without Emily.

We took the egg (1 of 2) at Emily's nest at CCL2 to put in the incubator. The nest is E-64 and the ♀ is FWW A1# 713. The ♀ was incubating the nest and flushed when we approached. We brought the egg back in toilet paper inside a ziploc baggy. It was raining and the egg felt cold when we arrived to the cabin.

The water gauge had 0.7 cm of rain water in it. We dumped it to reset. JYL

24 May

Forgot to mention  
our egg in the incubator  
-64 was bad. Took  
tissue samples &  
put in vial with  
ethanol.

Both Anne & Steve  
aw copulations today

Today we anticipated rain and therefore planned for a busy watch morning. Steve, Anne, & I all did 4-1 hour core watches in the morning and two additional in the afternoon.

All was successful without rain. We were all tired afterward and did a group nest search around OCV. Julian arrived from Panama City in the evening. JYL



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2005

## Journal

Isla Boca Brava, ~~David~~, Chiriquí, Panamá.

25 May Steve, Anne, & I all went to David to buy supplies. We left before 9am to catch the Boca Chica-Horconcitos bus. The bus never returned, but fortunately we were able to get a ride from Elvy Villalobos. This David trip was reasonably priced - No cost for transportation, except water taxi for 3 people to B.C. \$3, and \$1 back for me. I was able to ride back to B.C. with Elvy in the afternoon, while Anne and Steve stayed in David to start their vacation. Groceries, copies, and lunch totalled ~\$45.00. JYL

26 May Today was a busy day for Julian and I. Julian spent the day doing playbacks and recording pairs. I did five watches in total, nest searching (2 new) and nest checking. The ♀ from E-64 was incubating the lone egg, which is good news. All of the quail eggs continue to be present in our pilot nest experiment nests that are in ACA. We plan to start the experiment on Sunday - placing eggs in the nests of 1/2 of all the core sites, then the second half on Monday (5/30). I paid Frank the bill tonight. It was \$215.25 which included 1 week x 5 people. Julian paid his share which was \$31.00 for food & lodging. JYL



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## Journal

Isla Boca Brava, Chiriquí, Panamá

27 May

Another long day in the field for Julian and I. I managed to fit in 6 watches at core sites before rain started at 4pm. Julian recorded birds and did observations at 4 core sites. I checked E-61 nest and anticipated an empty nest but found a fat, lone chick in need of blood sample and banding. Will do that tomorrow. JYL

28 May

Another humid, overcast day in the field. Julian watched 3 core sites and continued recording. I did 5 core sites. Quail eggs in pilot nests are still present but are growing mold. The nest experiment starts tomorrow. Low temp was 74°F + high was 85°F. Julian saw a ruddy-breasted Seedeater today - first one for the species list. JYL.

29 May

A very trying day in the field today. Like Emily says, "tourist-perfect" weather - blue sky, warm, breezy. I started the morning by bleeding/partial banding the chick in nest E-61. All well, good sample. After a watch at SBE 2 I went to SLN 3 to band/bleed the chicks from S-14. When I arrived, the smaller chick was obviously not looking good. His right eye was entirely swollen, yellowish skin color and seeping some kind of puss from where the lid was



DuVal,

E.H.

2005

29 May  
cont.

## Journal

Tsla Boca Brava, Chiriqui, Panama

closed. His head looked very big from the swelling that it was hard to tell that he was the smaller chick. I took out the bigger chick first and banded him FVB AL# 778 and got a great blood sample without any problems. I returned FVB to the nest and pulled out the smaller chick. Banding was a little more difficult since his legs were shorter. All bands fit "perfectly" and he was banded YRF AL# 779. I was able to get a nice blood sample from this chick as well, however he would not stop bleeding! I applied cotton balls and pressure. While we were waiting for the blood to stop- he spit up a seed. His breathing became progressively more labored and eventually started becoming weaker & weaker, gasping for air. He died in my hand. It was such a horrible ordeal, enough to really make me reconsider this field. I don't believe that my blood draw was different from the other two chicks this same day. I believe that this chick's health was already compromised some how that the excess loss of blood was way too much. I brought him back to the cabina after my 2 (painful) watches. I preserved him in ethanol with a label. I checked the other chick 2x more



DuVal,  
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## Journal

2005

Isla Boca Brava, Chiriquí, Panamá

29 May  
cont.

later in the day - he was full and sleeping.

Julian and I placed quail eggs in nests of half of the sites picked. The eggs were bought more than a week ago and were obviously moldy, & smelly. With all the distractions of the chick tragedy, I forgot to wash the eggs beforehand and realized that when in mangrove. I washed the remainder of my eggs (enough for 2 more sites) in the water near the BRI gully. I hope this doesn't bring in the wrong kind of predator to the nest, i.e. ants. We plan to wash and distribute the rest of the eggs tomorrow. Temp <sup>low</sup> high - 76°F ~~low~~ high 86°F. Water <sup>(rain)</sup> gauge had 1.5 cm of water since last time it was checked. JVL

30 May 05

After talking to EHD last night on the phone, we decided that the experimental nest project should be postponed until we buy new, fresh eggs. Julian and I took out all the eggs we placed yesterday. We go to David in 1 week and will look for eggs then. Temp. today was low 76°F - high 88°F, no precipitation in the rain gauge although it briefly rained last night. Anne and Steve returned this evening.



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E. H.  
2005

## Journal

Isla Boca Brava, Chiriquí, Panamá

31 May

The day started out with heavy rainfall that had been going since 9 pm the night before. The morning consisted of data tasks - nest sheets, data entry, and organization of existing data to determine where future watches are needed. Anne compiled Display Perch information ~~with~~ that speculates  $\alpha + \beta$  birds. This will be useful so we can concentrate watches at particular areas. After lunch we each did 2 watches & nest searched. Anne found 2 nests with eggs, one which will be problematic, since it is ~13' high. We've had 6.2 cm of rain since last night. I checked S-14 nest, and the remaining chick FVB has developed a yellow-filled blister on his (L) eye, similar to the one his sibling had. He couldn't open his eye. I will keep monitoring his condition. He should fledge soon. JVL

1 June 05

After a fierce rain throughout the night - the morning was "tourist-perfect", although bad manakin weather. Pretty quiet throughout the day. The most excitement of the day was seeing a crocodile! during lunch. All four of us saw it. The timing was good, since Julian had been swimming in the exact spot about 1/2 hour prior! According to Julian, this was a "small croc", but a croc nevertheless. I imagine no one will be swimming anytime soon! Temp 75°F - 84°F, raini-



DuVal,  
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## Journal

2005

June 1 cont.

Isla Boca Brava, Chiriquí, Panamá

1.3 cm - since last night. S-14 chick's eye is even worse - all swollen on left side of head. I took pictures with the video camera. Anne's nest that she found yesterday (A-7) has 1 chick and 1 egg and the ♀ is unbanded! The nest is so high that we are strategizing how to manage it. JYL

2 June 05

The day was very quiet today for everyone. The weather seemed to be suitable for manakin displays, but who knows? Temp was low 75°F to high 84°F. Steve bled and banded fully the chick from E-61 - A1 780 FBP. All went well. Boxer was a trooper today and worked all day. :)  
JYL

3 June 05

Another quiet day in the field. Things definitely picked up in the afternoon. A lot of QRing. I saw BW6 DM today (the ugly one). He sure looks strange. He was a great DM last year and used to hang around CCLS. He looks like someone put bleach on his blue back & on his head. I wonder what happened to him. He was hanging out at ACA 4 this evening. I didn't get a very good look. Temp 75°F - 85°F. JYL



Devel of coord. Singing - Julian's talk

Passerines = song birds or oscines?

RC = SY

CB = TY

DM = FY

H<sub>1</sub>: Partners became matched over time

week

Trainer & McD didn't have multiple yrs.

Short-term accommodation - consider post-DM age classes  
generalized variance

Which traits of song  $\Delta$  w/ age

- Review results slide 1

Same as what McD found for Long-tailed  
good randomization test

- partners more matched than random partners.

Active partner choice

AI  $\neq$  frequency matching

- Review long-term devel part

Lay out predictors explicitly.

~~the~~ Wals coordinate

~~How it~~

Canopy vs. understory diff.

% of time singing

Matching during aggressive interactions



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2005

## Journal

Isla Boca Brava, Chiriquí, Panamá

4 June 05

Activity level was somewhat high this am but tapered off throughout the day. Anne saw unb DM at BMB and I saw two down the Hel gully. We are going to net for Anne's nest tomorrow. We are going to use stacked beer crates to reach the nest. Emily's chick (now only 1) hatched in Wel 4. We have to stake that nest since we don't know the ♀. Temp today 76°F - 84°F. The afternoon is ending in rain. JVL

5 June 05

A very busy day for everyone. We set up 2 nets this morning at A-7 nest to catch the unb g. Steve was in charge and was successful in catching her. He banded her PFA AI # 781. Steve and Anne bled the chicks. The ♀ was seen again on the nest - so she did abandon. We should stake her nest again to confirm she is the one. I staked the nest in Wel 4 2X with any luck. Anne staked it as well and is yet to return. It rained hard last night - 6 cm, temp 75°F - 86°F. The kettle broke this am so we ate crackers and pb. I'm unsure what ~~tomorrow's~~ <sup>tomorrow's</sup> breakfast will bring.



DuVal,  
E. H.  
2005

## Journal

June 6, 2005

Isla Boca Brava, Chiriquí, Panamá

Today was busy staking nests. Steve was successful in seeing PFA at A-7 nest that was caught yesterday at the nest. She didn't abandon the nest. Anne and I both tried to see the Wel 4 ♀ but were unsuccessful. My J-1 nest had 2 chicks and I stalked it and saw RW- (g). Emily had a nest there already this year which was RWY's nest. We'll try again tomorrow. Precipitation was 1 cm and temp 75°F-85°F.

JYL

June 7

The day started with rain until ~ 10 am. Anne did data entry until lunch while Steve & I staked nests. Steve saw RW- g at J-1 but saw RWY in area. After lunch we all stalked again until the rain started. Anne was successful with Wel 4 nest & <sup>(AGA-♀)</sup> I saw YV- (g) down the gully on J-2 nest. We are planning our DAVID trip <sup>for</sup> tomorrow. JYL

June 8

To David for supplies. Bought another Keettle since ours broke. Tried to get Anne & Steve's visas extended but the regulations have changed and it is not possible to do in one day. After talking to EHD we decided to not renew them and will pay any fines if necessary. JYL



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E.H.

2005

June 9, 2005

## Journal

Isla Boca Brava, Chiriquí, Panamá  
DAY OFF

June 10, 2005

off and on rain all day. Julian was able to squeeze all his playbacks in today and did an extra one as he is one day behind. Steve stalked J-1 and got the ♀ RNY (g) and Anne bled/banded chicks. I got YAA (g) at J-2 and bled her chick. We started the experimental nest project today. The eggs were all washed yesterday and placed in nests today with gloves so no smell would be on them. Eight sites were done today + the 7 other will be for tomorrow. About 6 nests had to have some sewing adjustments. Temp 74°-85°F. JYL

== field notes by EHD:

June 2005

Rain in the late morning, not too heavy. <sup>approx.</sup> (10:30-11:00)  
We all did watches in the morning. While at EDM, I saw one of the two banded Black-hooded Antshrike females (B/B). She perched high over EDM5 for a long time, and foraged high in the trees. At least one of them didn't tear their bands off! In the afternoon, Steve and I set four nets in the BTE/GULY area and netted until 5:30 but caught nothing. Anne + Julie put quail eggs in the experimental nests in the last 7 lines of nests. Julian did playbacks.



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E.H.  
2005

## Journal

Isla Boca Brava, Chiriquí, Panamá

June 13

EHD and JK left for Boquete for a few days before JK leaves for the States. Yesterday EHD netted at BTE and had some unexpected issues with badly? caught birds or at least previously injured birds and then stressed by being caught in mistnet.

At almost 7pm last night chicks from J-1 nest (♀ RWY) were still hungry. ♀ was caught in net and had lacerations on face and leg, cause unknown. Today we confirmed that she did indeed abandon nest.

After feeding chicks at nest all morning, we then took the larger chick to nest at Wei 4 (E-63) to see if ♀ would foster. The other chick we brought to the cabin. AGA indeed did adopt ♀ chick with no problems. Anne saw RWY (♀) in the pm at DPO and appeared to have a hurt (broken?) leg.

JYL

June 14

AGA is still taking care of chick in nest (E-63). Our baby in the cabin is eating/defecating well. I collected some berries that I have seen adults eating, at a tree near the crossroads. It rained in the morning for 1 1/2 hours, and off and on in the pm. Steve did data entry in the am & took care of the chick, while Anne took over this ~~morning~~ afternoon. Temp 74°F - 85°F.

Rain gauge checked & has 6.5cm since last time checked (a few or more days). JYL

All experimental eggs still present.



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## Journal

### Isla Boca Brava, Chiriquí, Panamá

June 15

A "tourist-perfect" day today - sun, blue sky, slight breeze. Anne & Steve did watches in the morning and I entered data while feeding our healthy/happy chick. Steve took over in the pm and Anne & I continued watches. Temp 74°F - 84°F; EHD returns this pm. JYL

June 16

Temp 77°F - 84°F; 3cm rain since last night. Steve took the day off, and Anne worked most of the day because a Bolaños trip fell through when the tourists balked at the early-morning rain. The day turned out to be perfect, though. Julie & EAD netted at BTE and GUL 4, hoping to catch the local males but having no luck. Anne did data entry in the morning and watches in the afternoon. Activity on the site has dropped DRAMATICALLY since I left for Florida. Now one duetting but is considered an exciting watch.

June 17

Julie, Anne, & Emily set nets near CCL1, FBR, and LHK - a big area that can be centrally monitored. We caught three unbanded young males (2 CB's and one with a tawny "spot" that's probably a hatch-year male. Steve was sick, with a temperature of 106°, so the Bolaños plans were scrapped for good.



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2005

## Journal

### Isla Boca Brava, Chiriquí, Panamá

June 18

We continued netting in the CCL1 area, and still had no luck catching DMs. I got some response with playbacks of PF-1 vocalizations (local & flew in) and female downwhistles (lots of down-whistling birds flew in), but the birds that responded flew high and avoided the nets. The CB's that we're catching now are well into the yearly molt, with  $\sim 1/2$  of primaries replaced. We opened nets for ~~half~~ an hour in the afternoon after doing some watches, and caught 4 birds in short order. This was the most successful netting day we've had in a while. The weather has been classically "rainy season" - sunny during the day and raining for most of the night. Steve stayed home to enter data & babysit the J-1 chick ("Jesse"), who is growing well. She's preening actively & stretching often. Steve is still sick, but better than yesterday.

June 19

78-85°F

Today was the last netting day for a while at CCL1/LHL. We only netted for the morning, and had little luck. In the afternoon, we all did watches.



Dokal,  
E.H.  
2005

## Journal

Isla Boca Brava, Chiriqui, Panama

19 June cont.

I intended to come home early after just one watch to review the data and see where we stand with knowing  $\alpha$  &  $\beta$  status around the site. Instead, I staked nest S-15 (that hatched today) and saw FGal G (G) <sup>mobbing</sup> ~~feet~~. It seems that she was banded with the aluminum over her last color band, making her bands look like FGB. Whoops! Seeing the final "G" makes it all clear, but we need to change her bands. I also found a nest with two LARGE chicks - so large that I was afraid they'd fledge while I was doing a 1-hour watch at MAN. They didn't, and I banded & bled them while WBW (G) mobbed me. The MAN watch was surprisingly busy - this is the only site that seems active right now! (Though I did hear QR between the MAN & HEL gullies). The males did nonstop duets separated by "searching" PF-1 or PF-2. There were at least 3 DM's in the area. The others had slow watches, as in other recent days. Nevertheless, my afternoon gave me renewed hope for productive data collection.



DuVal,  
E. H.  
2005

# Journal

## Isla Boca Brava, Chiriquí, Panamá

20 June  
72-84°F

There was an incredible storm last night - we were all soaked, as were our beds + all our things. The lightning was extremely close + the winds were reminiscent of a hurricane. I stayed en casa in the morning to review and organize the data, while babysitting the chick. Her weight did not increase from yesterday morning (13.0g), so I'm trying to up her intake of prepared baby food ("TLC" brand from the Melo pet store in David - we're out of "Exact"). Yesterday she largely ate the red berries that seem to be the main Manakin food right now.

### DATA REVIEW (non-core sites):

<u>site</u>	<u># 1-hr watches done</u>	<u><math>\alpha</math></u>	<u><math>\beta</math></u>
ADS	* 10	YWR	--R
BMB	* 8	?RPR, AY-	
CAS	* 9	VGG	BWP
CCL2	13	RY4?	WBR?
CRZ	12	ABP	?
DPD	12	YPB	BYW
FBR	* 7 <del>5</del> + lots and here	AOP	PGY
FEN	* 5	?	?
GUL1			
GUL2			
GUL4			

lots uab



DoVal,  
E.H.

2005

# Journal

Tsla Boca Brava, Chiriqui, Panamá

20 June cont.

site

# 1-hr watches

α

β

HEL

\* 4

WYW

?

lots unb

HOC

\* 4

?

?

LED

\* 1 + Julian

CYR?

?

unb BM

LOT

16

(SF 1x)  
YRS ???

?

OCV

10

YPY

GRY

PHT1

4

???

???

PHT2

20

GBY

?

PUP

\* 5

AYS

VBV?

SBE3

13

GPY/WBG

?

SLP

\* 8

GWV

RRA?  
YVV?

Wel 1

13

VYG

GAV

Wel 2

\* 8

BAY  
RGG  
-YB

???

MAN

12

APY/ARYW

SPY



Things Anne does/did "specially":

- ① At the beginning I called QR a "CR"
- ② " I called a CB a "CM"
- ③ My first watches at BTE (all the ones in March) were at THK rather than BTE3 - after that all watches at BTE3 unless written
- ④ At the beginning I approximated some QR + Salir numbers when I lost exact count ~~and~~ - these numbers are written with "~" in front and are usually w/in  $\pm 10\%$  I would guess
- ⑤ Later on I approximated QR's + Salirs by counting a subsample of 1 min (or usually more) - made a note of this by writing the number with a "\*" and making a note (ie. 15\*)  
Then I finally got good at counting in my head, and then they stopped QR-ing. Sigh.
- ⑥ My directions were a bit mixed up for the first month or so - especially out in the BRI/ MAN area (thought North was West, etc.)

Emily H. DuVal  
Emily H. DuVal



# How to ~~interpret~~ Steve's crazy data interpret

- ① Always question my "B" band sightings I mistook RYV for RYB and GAW as GBW.
- ② Beware of misplaced or missing stars where dances were seen. Sometimes (early on) I either forgot a star or put it in in the Displays/Observations column.
- ③ I ignore height recordings for many scans. Sometimes I just recorded heights when they occurred.













